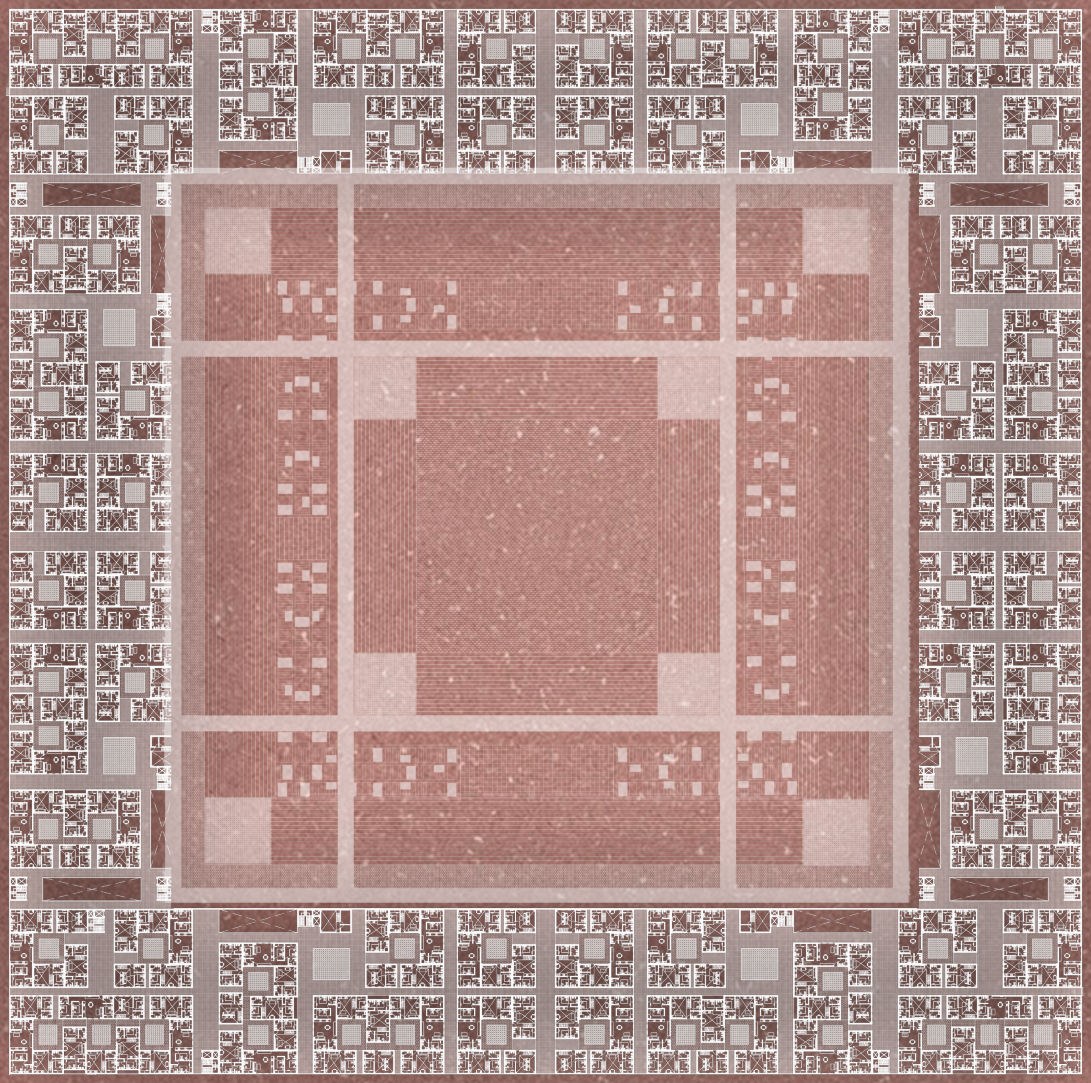
Architectural Metamorphosis & Urban Formulation:

A Comparative Exploration of Shapes in Architectural Forms and Unraveling the Morphology of the City as the Blueprint for Planning and Development.



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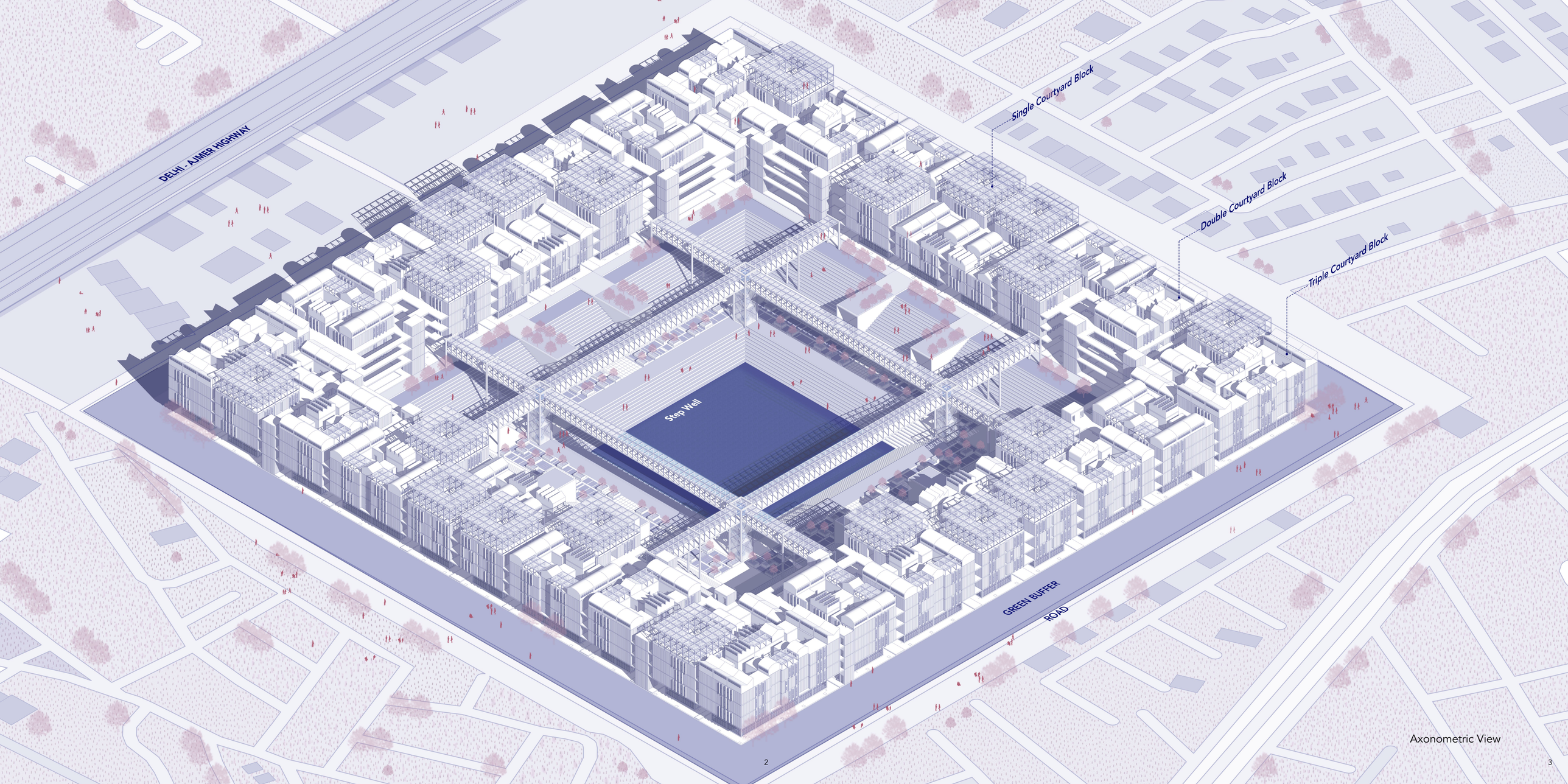

Axonometric View

Politecnico
di Torino

EMME RESEARCH LAB

This thesis is a contribution to the EMME Thesis Lab.

The EMME_THESIS_LAB is a design and research unit for master's students, where each collective thesis forms a narrative inquiry into the diverse urban morphologies of the East Mediterranean and Middle East (EMME) region. Interwoven with the diverse threads of identity, emergency, and migrancy, the research endeavors to understand the complex fabric of places that define the region's distinct character. Each master student contributes a unique case study, serving as an individual patch within this larger context. Together, these studies engage with the dynamic interplay of architectural forms and the societal forces that shape them. The theses collectively aim to explore, analyze, and interpret the urban landscapes of the EMME region, aiming to further the understanding of its identity and morphology.

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KEYWORDS:

Le Corbusier, Venice, , Venice Hospital, Mat-building, Nine Square Grid, Jaipur, Forms, Morphology, Vastu Purusha Mandala

PAPER OVERVIEW:

The title **"Architectural Metamorphosis: A Comparative Exploration of Shapes in Architectural Evolution"** suggests that this paper will delve into the transformative changes and developments in architectural forms over time. Here's a breakdown of the key components:

1) A Comparative Exploration:
- Comparison of shapes in architectural evolution

2) Shapes in Architectural Evolution:
- Focus on understanding and analysing architectural shapes

3) Exploration of how shapes have evolved over time
- Consideration of influences from modular construction, prefabrication systems, and innovative designs

ABSTRACT:

This thesis explores the integration of urban morphology into architectural design, with a particular focus on the approaches of Charles Correa and Le Corbusier. While traditional architectural theories often draw on cosmic principles and universal laws, this study emphasizes the practical application of Jaipur city's nine-square grid as a foundational design element. By examining both historical and modern architectural contexts, including iconic projects such as Jawahar Kala Kendra and the Venice Hospital, the research highlights the enduring relevance and adaptability of the nine-grid system in shaping architectural compositions.

The nine-grid system offers versatile design principles, including radial organization, grid regularity, and hierarchical block size variation. This framework, exemplified by architects like Louis Kahn and Rem Koolhaas, underscores its integral role in contemporary architectural practice. Drawing parallels between Jaipur's urban fabric and architectural design methodologies inspired by Correa and Le Corbusier, the thesis explores how a deep understanding of local morphology can foster innovative solutions that resonate with cultural heritage while addressing modern urban challenges.

Through an in-depth study of Jaipur's urban morphology, including courtyard layouts and street hierarchies, the thesis proposes new architectural designs that integrate these elements. This approach mirrors Correa's strategy at Jawahar Kala Kendra and Le Corbusier's adaptation in the Venice Hospital, demonstrating how urban morphology can inform contemporary architectural discourse. By examining the intersection of urban form and architectural innovation, this thesis contributes to a nuanced understanding of how the inherent structures of cities can inspire and shape architectural design practices.

Contents

INTRODUCTION

Since ancient times, humanity has sought to understand the universe's order through astronomy's empirical laws based on celestial movements. These observations gave rise to spatial concepts like the square and cube, esteemed for their geometric clarity and representation of universal laws in architecture. Modern architects, inspired by figures such as Buckminster Fuller and Le Corbusier, continue to explore geometric forms to align buildings with universal harmony. Vastu Shastra in India and Maharaja Jai Singh's Jaipur city exemplify this integration of cosmic principles into architectural design. This thesis explores these ideas through the nine-square grid, showcasing its adaptability and enduring significance in architectural composition.

The nine-grid system in architecture offers versatile design principles: emphasizing the central square, organizing in radial patterns, ensuring grid regularity, creating hierarchy through block size variation, modifying cube shapes, shifting cubes for new configurations, and employing symmetry and axis changes for innovative designs. These principles underscore geometric adaptability and their integral role in modern architecture

This thesis explores how the nine-grid system, emphasizing symmetry and spatial organization, has influenced architecture across historical and modern contexts. Studying 25 projects, including the Temple of Solomon, Palladio's Villa Rotunda, and Jaipur's city plan, it highlights the system's enduring relevance and adaptability in architectural design.
Le Corbusier's Villa Shodhan in Ahmedabad and the Museum of Legacy in Jaipur, along with Louis Kahn's Exeter Academy Library, illustrate the versatile application of the nine-grid system in architecture. John Hejduk and Peter Eisenman further explore this concept with added complexity, while Rem Koolhaas and Kersten Geers adapt it with curvilinear forms and simplified designs. Similarly, Charles Correa's Jawahar Kala Kendra and B.V. Doshi's Vidhyadhar Nagar in Jaipur showcase Indian interpretations of the nine-grid system. Rudolph Michael's Popenoe Cabin and the Dashavatara Temple exemplify its application beyond modern contexts, rooted in ancient architectural traditions.

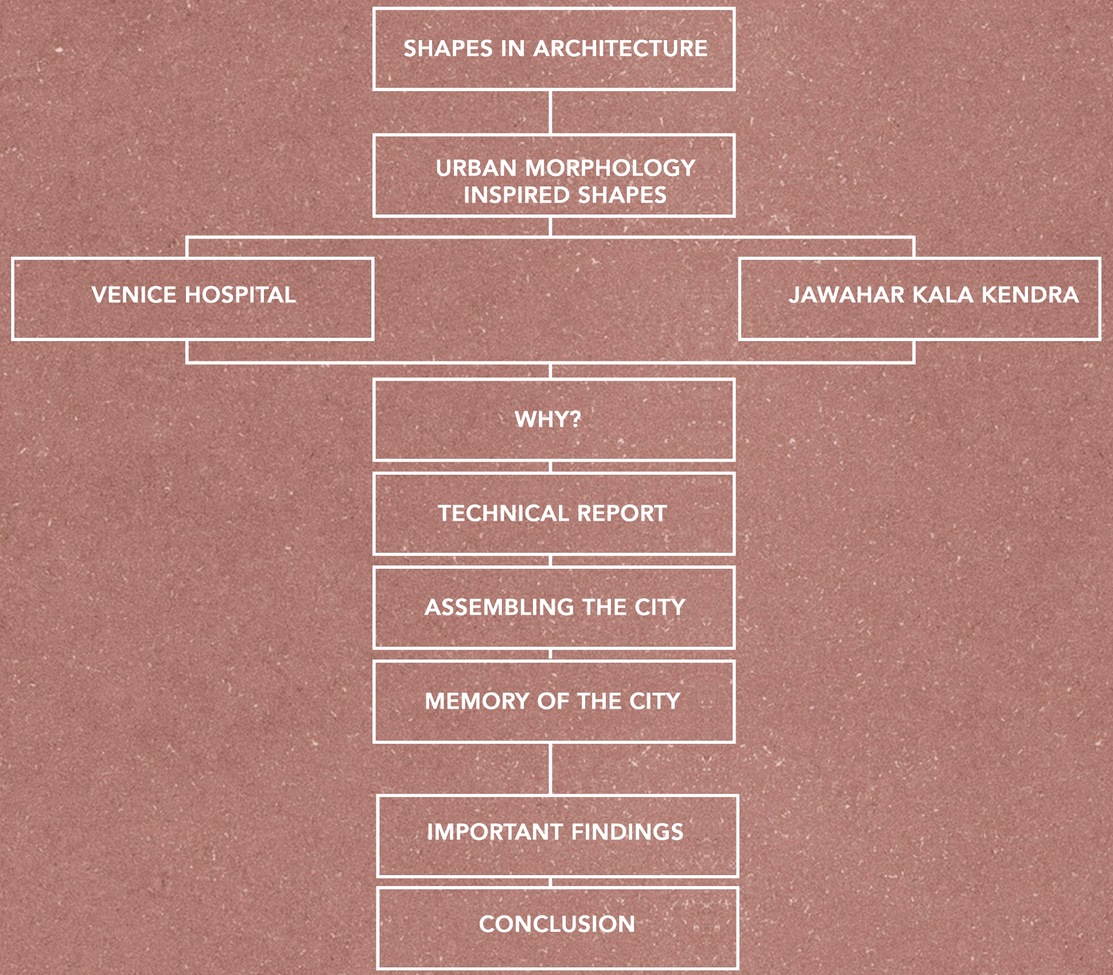
The Temple of Kashi Vishwanath by Man Singh, SOLO House by Pezo Von Ellrichshausen, La Plata City by Pedro Benoit, and Humayun's Tomb by Mirza Mirza showcase the nine-grid system's adaptability across different historical and cultural contexts. Similarly, James Edward's Savannah City Plan, Le Corbusier's Venice Hospital, Louis Kahn's Trenton Bath House, and Shigeru Ban's Furniture House illustrate its enduring impact in modern architecture. These examples collectively highlight the nine-grid system as a timeless organizational principle, demonstrating its versatility and influence in architectural design. In-depth analysis of projects like the Venice Hospital and Jawahar Kala Kendra emphasizes the role of morphology

I delved into Jaipur City's morphology to develop a new architectural design that interprets its urban rules. Drawing from various elements of Jaipur's urban fabric, my design resonates with the city's rich historical and cultural context. This approach echoes Charles Correa's strategy in designing the Jawahar Kala Kendra in 1986, where he used Jaipur's morphological elements to create a cultural center. Similarly, Le Corbusier, in his later years, integrated Venice's urban morphology into the design of the Venice Hospital, employing a pinwheel system derived from the city's layout. Both architects exemplify how a deep understanding and respect for a city's morphology can inspire innovative architectural solutions that honor cultural heritage and context. Their work highlights the importance of integrating urban morphology into architectural design to create projects that are contemporary yet deeply rooted in their environments.
Both Charles Correa and Le Corbusier demonstrated how simple geometric forms, like the square, can inform innovative architectural styles rooted in urban contexts. In my own research, I followed a similar approach by immersing myself in Jaipur's old walled city. I meticulously studied traditional courtyard layouts of havelis, observed street hierarchies and crossroad systems, and examined details like density, water systems, and architectural features. This comprehensive study guided the development of rules for my thesis project, inspired by the methodologies of Correa and Le Corbusier. Through this process, I aimed to create a contemporary architectural design deeply rooted in Jaipur's rich historical and cultural heritage.

This thesis guided me in exploring and understanding the morphology of the city and the crucial role urban morphology plays in project design.

METHODOLOGY

In this thesis, I explored the shapes in architecture, with a specific focus on the primary shape: the cube or square. I began by conducting an extensive literature review to understand the significance of these shapes in architectural history and established a theoretical framework to guide my research. I then collected various architectural projects from different historical periods that prominently feature the cube or square, analyzing these projects to identify common design principles, particularly focusing on the nine-square grid. From this collection, I selected two major projects influenced by city morphology: the Veniec Hospital by Le Corbusier and the Jawahar Kala Kendra by Charles Correa. These projects were chosen for their relevance to the study of urban morphology and its impact on architectural design. I explored the urban contexts of both projects, examining architectural drawings and plans to understand how city morphology shaped their designs. Through this analysis, I identified similarities and differences in the approaches of the two architects and decoded the architectural principles for my thesis. I then applied these principles to a selected site in Jaipur city, following a similar method to design a project that integrates the urban context and morphological influences. Finally, I evaluated and refined the design through iterative processes to ensure alignment with the theoretical framework and urban morphology. This methodology allowed me to systematically explore the influence of primary shapes and urban morphology on architectural design, culminating in a practical application within Jaipur city.

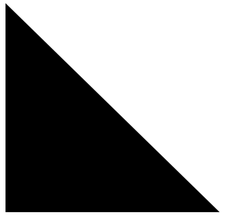


Chapter 1:

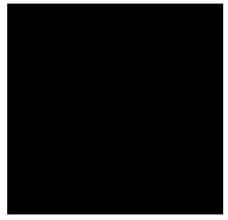
SHAPES IN ARCHITECTURE

The principles of universal order have long influenced architecture, with ancient astronomical observations leading to the creation of foundational geometric shapes. The right-angled cross evolved into the square and cube, central forms due to their clear lines and angles, representing universal spatial laws.

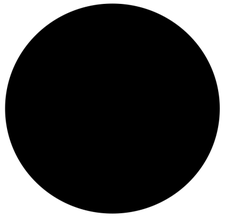
This chapter explores the historical and practical importance of shapes in architecture, particularly focusing on the cube. Key examples such as Leonardo da Vinci's Vitruvian Man and Le Corbusier's Modulor illustrate how geometric shapes have consistently shaped architectural design, embodying both aesthetic clarity and universal order.



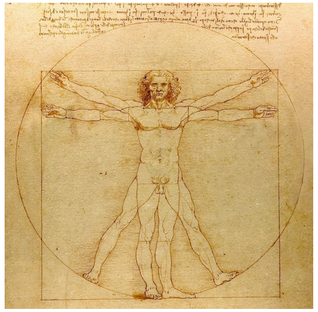
The Vitruvian Man of Leonardo da Vinci



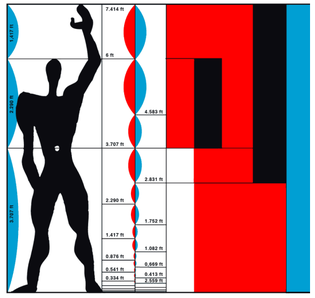
Modulor Man by Le Corbusier



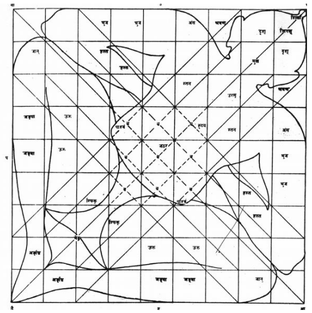
Vastu-Purusha Mandala



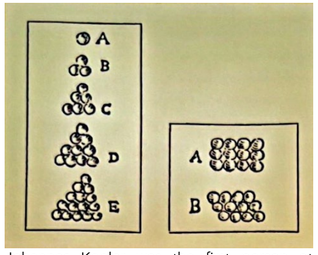
The Vitruvian Man of Leonardo da Vinci



Modulor Man by Le Corbusier



Vastu-Purusha Mandala



Johannes Kepler was the first person ot cary out geometrical analysis fohte tightest posible way ot pack spheres.

Buckminster Fuler and Arthur Loeb opposed the traditional rectangular coordinate system with the tetrahedral structure derived from the tightest possible way of packing spheres.

The 'Sun Wheel' at Konarak Sun Temple

THE PRINCIPLES OF UNIVERSAL ORDER IN ARCHITECTURE

The question of the principles by which the universe is ordered is one of humanity's oldest inquiries. Historically, people have assumed an all-embracing order as the foundation for philosophical and scientific exploration. Over time, theologians, philosophers, and scientists have taken various approaches to this question, yielding diverse findings.

In ancient astronomy, empirical laws were recognized early on. Observations of the sun's daily movement, the stars, and seasonal cycles were seen as evidence of a universal order. Geometrical determinations such as the sunrise, meridian, and sunset led to the creation of the four compass points and the right-angled cross, which became the basis for spatial thinking. This cross evolved into the square and then the cube, a fundamental architectural form.

The circle and its spatial counterpart, the sphere, also emerged from astronomical observation. However, their use in architecture was limited due to the technical and conceptual challenges they posed compared to the cube, which is easier to verify geometrically.

Thus, the cube holds a significant place in architecture for two main reasons: its visually clear lines and angles, and its representation of a universal spatial law informed by astronomy. Even modern architects seek to align buildings with a 'universal' order, though this can differ from traditional spatial structures. For instance, Buckminster Fuller criticized the paradox of fitting our environmental experience into the cube framework, advocating for hexagonal and tetrahedral structures instead.

FULLER'S ARCHITECTURAL REVOLUTION

Buckminster Fuller discovered that many natural structures use 60° angles, leading him to believe that nature's basic building blocks are triangles, hexagons, and tetrahedrons. He rejected the traditional XYZ-plane, favoring the tetrahedron's 60° angles over the right angle. In his quest to understand the universe's fundamental energy structure, Fuller observed that the hexagon represents the most compact arrangement in one plane and the tetrahedron in space.

Fuller developed "energetic and synergetic geometry" from the tetrahedral grid. This led to innovative inventions like his geodesic domes and extended into speculative cosmology, bordering on numerology. Fuller's theories can be seen as a systematic extension of ideas about the universe's formation, similar to Johannes Kepler's 17th-century work on hexagonal snowflakes.

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THE CUBE'S ENDURING ROLE IN ARCHITECTURE

Astronomy has long provided insights into fundamental questions about existence and the universe. Ancient observations of celestial phenomena led to the creation of cardinal directions and geometric shapes, shaping spatial thinking. The transition from the cross to the square and finally to the cube was a natural progression, with the cube becoming a vital architectural form through the ages. Its clear lines and angles, along with its representation of a universal spatial order from astronomical observations, highlight its enduring significance. This thesis explores the importance of shapes in architecture, focusing on the cube's historical relevance and practical utility.

THE VITRUVIAN MAN: STUDY OF HUMAN PROPORTIONS

Leonardo da Vinci's renowned drawing, the Vitruvian Man, is part of the Gallerie dell'Accademia collection, originating from Giuseppe Bossi's collection in Milan. Bossi acquired the drawings in 1807 from the De Pagave family, who had inherited them from countess Anna Luisa Monti, heir to Cardinal Cesare Monti. In 1784, Carlo Giuseppe Gerli engraved and published these drawings, including the Vitruvian Man.

Created during Leonardo's time in Milan, the Vitruvian Man depicts an ideal human figure in two positions within a circle and a square, symbolizing the sky and earth. This illustration exemplifies the correspondence between the macrocosm and microcosm.

Initially thought to directly reflect Vitruvius's theories from De architectura, recent research indicates that Leonardo's drawing also incorporates ideas from Leon Battista Alberti and Euclidean theory. The proportions Leonardo used align more with Alberti's De statua rather than Vitruvius's text, suggesting that Leonardo, unfamiliar with Latin, likely didn't access Vitruvius's treatise directly. The drawing shares its high standards with other studies of human proportions found in collections in Venice, Turin, and Windsor.

THE MODULOR: BRIDGING SCALES IN ARCHITECTURE

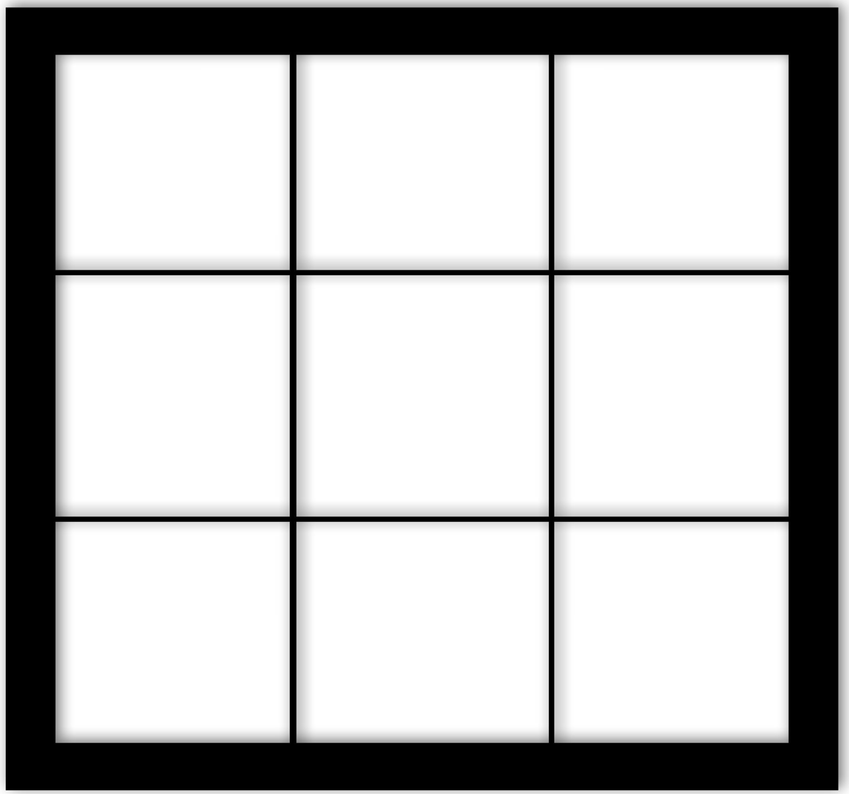
The Modulor, conceived by the Swiss-born French architect Le Corbusier (1887–1965), serves as an anthropometric scale of proportions. Designed to reconcile the Imperial and metric systems, it is anchored on the height of a man with his arm raised. Le Corbusier standardized the male height at 1.83 m, excluding feminine measures, with the raised arm's overall height set at 2.26 m.

Chapter 1.1

SQUARE IN ARCHITECTURE

The nine-grid geometry stands as a foundational tool in architectural design, offering principles that shape spatial organization and creativity. Originating from the pedagogical exercises introduced by Architect John Hejduk in 1954, the nine-grid concept has been revered by influential architects throughout history, including Le Corbusier, Louis Kahn, and Rem Koolhaas, among others.

The principles embedded within the nine-grid geometry offer architects a versatile toolkit for spatial exploration and design innovation. From its origins in educational exercises to its integration into the works of renowned architects, the nine-grid concept continues to influence architectural practice by fostering creativity, order, and dynamic spatial relationships. This chapter explores the foundational principles of the nine-grid geometry and its enduring relevance in contemporary architectural design.



Principles of the Nine-Grid Geometry in Architectural Design

Central Arrangement and Radial Organization
At its core, the nine-grid geometry facilitates two primary organizational approaches: central arrangement and radial organization. The central arrangement model centers around a large, dominant central space, flanked symmetrically by eight smaller spaces. This configuration embodies principles of stability and introversion, where the central space serves as a focal point of architectural composition.

Conversely, the radial organization expands outward from a central point, creating a dynamic layout where spaces radiate from a central axis. This extroverted approach allows for the creation of interconnected spaces within the grid system, fostering spatial complexity and interaction.

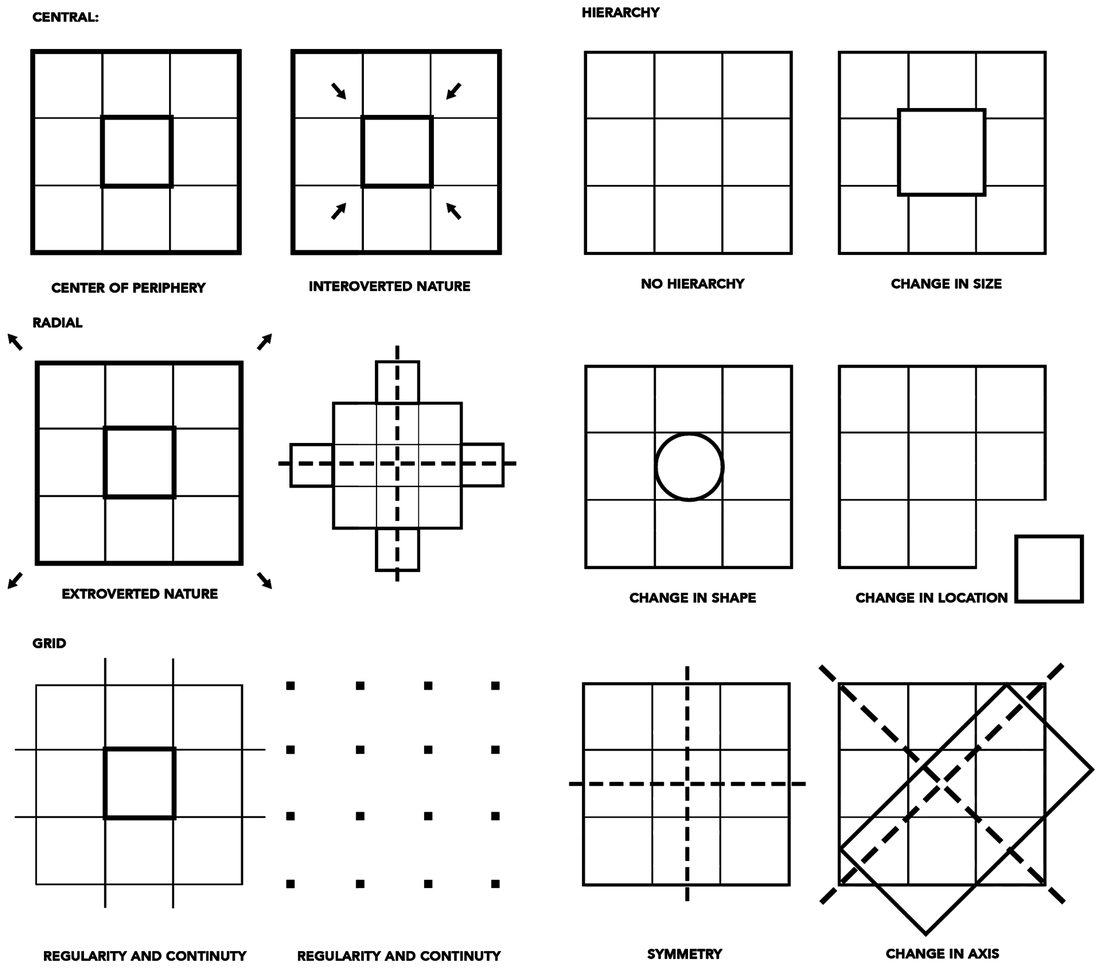
Organizational Power and Hierarchy
The nine-grid system demonstrates significant organizational power by providing 16 stable reference points. This regularity and continuity within the grid framework enable architects to establish clear spatial hierarchies. Initially egalitarian, with all spaces equal, the introduction of varying space sizes within the nine-grid system initiates hierarchy, influencing the visual and functional relationships between spaces.

Flexibility and Symmetry
Flexibility is a hallmark of the nine-grid geometry, offering designers the ability to shape and shift spaces within the framework. This adaptability supports diverse design solutions and spatial configurations, fostering innovation and creativity in architectural practice.

Symmetry plays a crucial role within the nine-grid system, contributing to a sense of equilibrium and order. The inherent symmetry of each configuration within the grid reinforces spatial harmony and visual balance, enhancing the aesthetic and functional qualities of architectural compositions.

Design Principles and Innovation
Beyond its structural attributes, the nine-grid geometry introduces fundamental design principles that guide architectural innovation. By manipulating imaginary axes that define spatial relationships, designers can explore new dimensions of spatial order and visual dynamics. This ability to redefine axis orientations enables the creation of unique architectural forms and spatial experiences, enriching the design discourse

9 SQUARE GRID



Historical Application of the Nine-Grid Principle in Architecture

The nine-grid geometry, a fundamental concept in architectural design, has been utilized by architects throughout history to shape and organize spatial compositions. This chapter explores notable examples where the principles of the nine-grid system have been applied across diverse architectural contexts and styles.

Temple of Solomon Reconstructed by Juan Bautista (17th century)
The Temple of Solomon, reconstructed by Juan Bautista in the 17th century, exemplifies the application of the nine-grid system in sacred architecture. Following the Solomonic order of design, this structure incorporates symmetry and a hierarchical arrangement of spaces within the nine-grid framework.

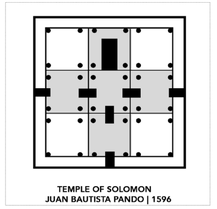
Villa Rotunda by Andrea Palladio (1565)
Andrea Palladio's Villa Rotunda, a masterpiece of Palladian architecture, extends the nine-grid system outward in an extroverted manner. Palladio integrates a circular dome within one of the grids, showcasing both symmetry and innovative spatial configuration.

Maharaja Jai Singh's City Plan for Jaipur (18th century)
Maharaja Jai Singh's extension of Jaipur city, based on the Vastu Purusha Mandala concept, follows the nine-grid system adapted to the city's topography. This plan involves shifting the location of one square to harmonize with the urban landscape, demonstrating flexibility within the grid framework.

Louis Kahn's Exeter Academy Library (1971)
Louis Kahn's design for the Exeter Academy Library utilizes the nine-grid system to establish a hierarchical center and chamfered corners. His meticulous attention to grid-based organization highlights clarity and spatial order in architectural design.

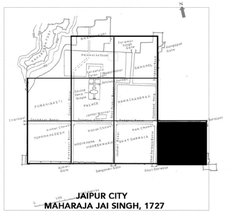
Le Corbusier's Villa Savoye (1931)
Le Corbusier's iconic Villa Savoye integrates the nine-grid system with ramps and grid pillars, inspired by Andrea Palladio's principles. The design emphasizes a central area and exemplifies Corbusier's mastery in spatial arrangement and functional clarity.

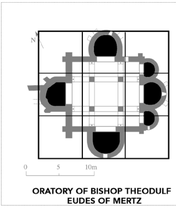
Shigeru Ban's Furniture House (1995)
Shigeru Ban's Furniture House demonstrates contemporary application of the nine-grid concept in residential architecture. His innovative use of grids showcases adaptability and integration of spatial principles into modern design practices.


TEMPLE OF SOLOMON
JUAN BAUTISTA PANDO | 1596

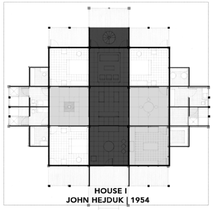

VILLA ALMERICO CAPRA (LA ROTONDA)
ANDREA PALLADIO | 1565

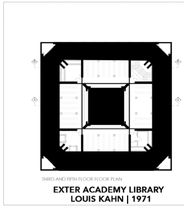

NEW HAVEN MASTER PLAN
JOHN DAVENPORT | 1641

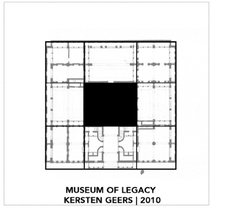

JAIPUR CITY
MAHARAJA JAI SINGH, 1727


ORATORY OF BISHOP THEODULF
EUDES OF MERTZ

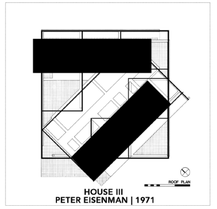

VILLA SAVOYE
LE CORBUSIER | 1931


HOUSE I
JOHN HEJDUK | 1954

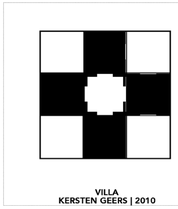

EXTER ACADEMY LIBRARY
LOUIS KAHN | 1971

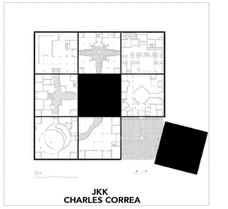

MUSEUM OF LEGACY
KERSTEN GEERS | 2010


SHODHAN VILLA
LE CORBUSIER


HOUSE III
PETER EISENMAN | 1971


TRES GRANDE BIBLIOTHEQUE
OMA | 1989


VILLA
KERSTEN GEERS | 2010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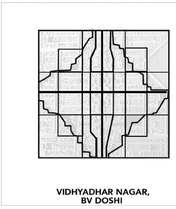
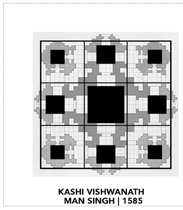
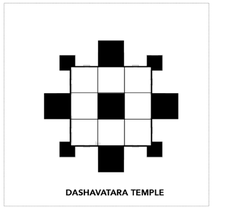
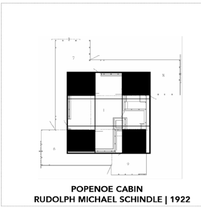

VIDHYADHAR NAGAR,
BV DOSHI


LA PLATA CITY PLAN ARGENTINA
PEDRO BENOIT | 1836

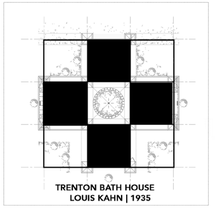

SOLO HOUSE
PEZO VON ELLRICHSHAUSEN | 2014

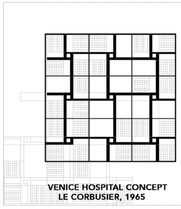

KASHI VISHWANATH
MAN SINGH | 1585

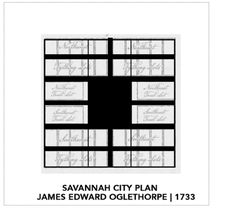

DASHAVATARA TEMPLE

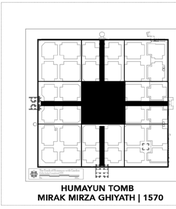

POPENOE CABIN
RUDOLPH MICHAEL SCHINDLE | 1922


FURNITURE HOUSE
SHIGERU BAN | 1995


TRENTON BATH HOUSE
LOUIS KAHN | 1935


VENICE HOSPITAL CONCEPT
LE CORBUSIER, 1965

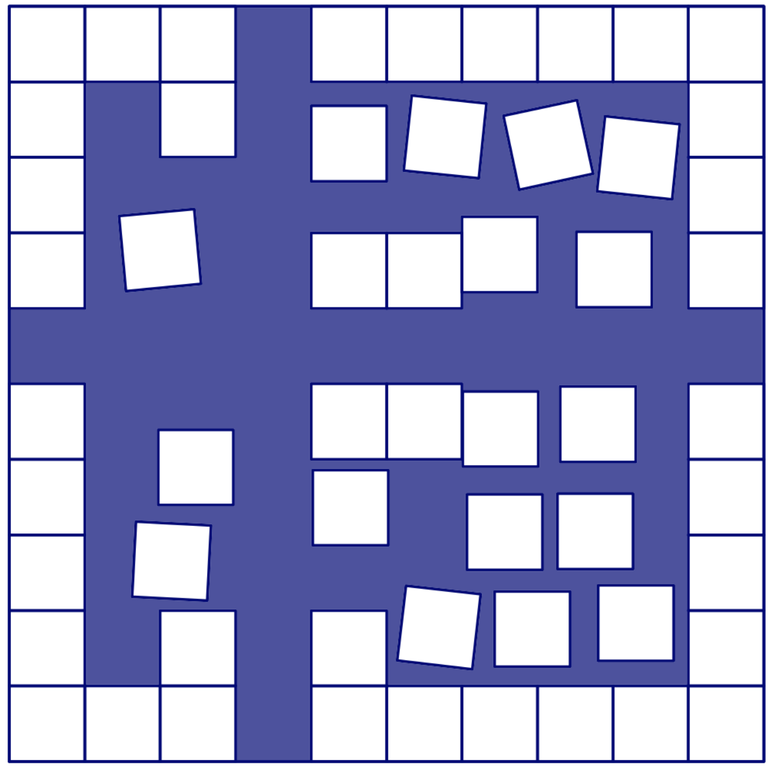

SAVANNAH CITY PLAN
JAMES EDWARD OGLETHORPE | 1733


HUMAYUN TOMB
MIRAK MIRZA GHIYATH | 1570

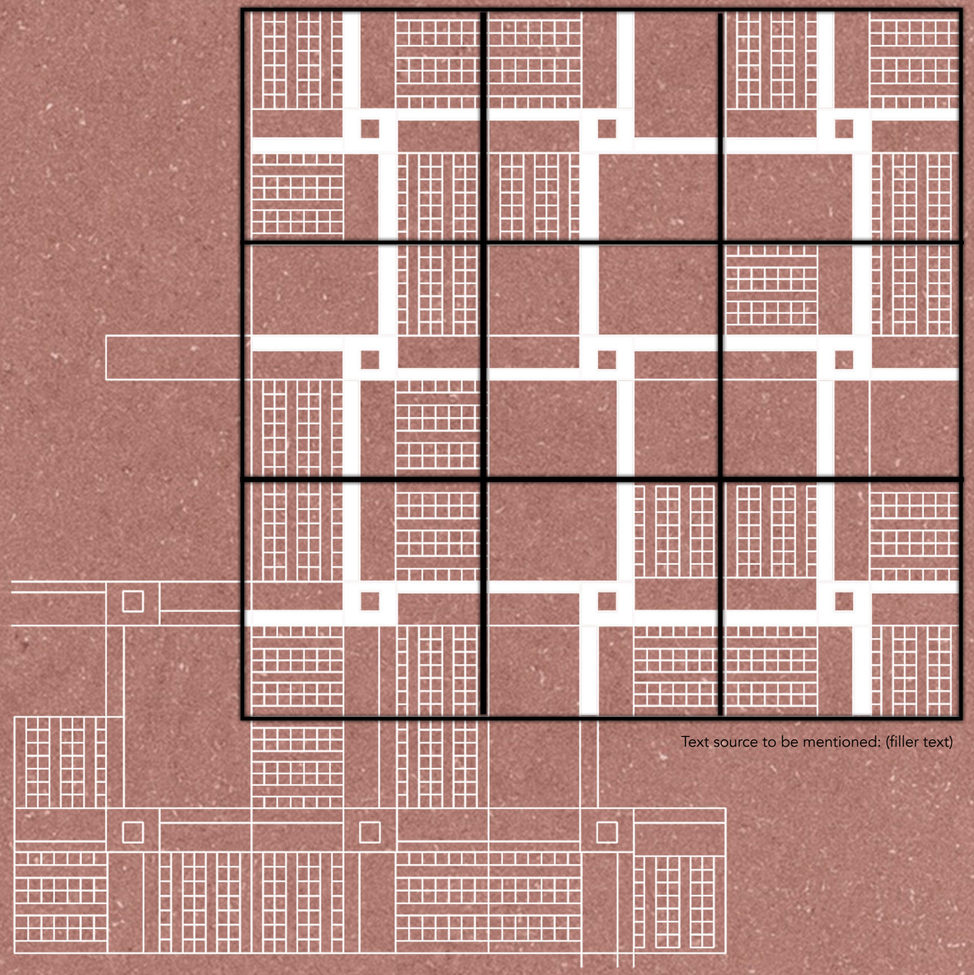
Chapter 1.2

CITY MORPHOLOGY (BLUE PRINT FOR PLANNING)

Designing buildings that draw inspiration from urban contexts is crucial for creating architecture that resonates with its surroundings. Architects like Charles Correa and Le Corbusier exemplify this approach by integrating urban planning principles into their designs. For instance, Correa's work in Jaipur and Le Corbusier's Venice Hospital showcase how architecture can harmonize with city identity and historical context. By adapting to local climate conditions and using indigenous materials, architects ensure sustainability while preserving cultural authenticity. Innovating architectural styles with elements from the cityscape enriches design creativity and enhances urban environments, contributing to the lasting cultural and architectural legacy of cities worldwide.



Venice Hospital | Le Corbusier



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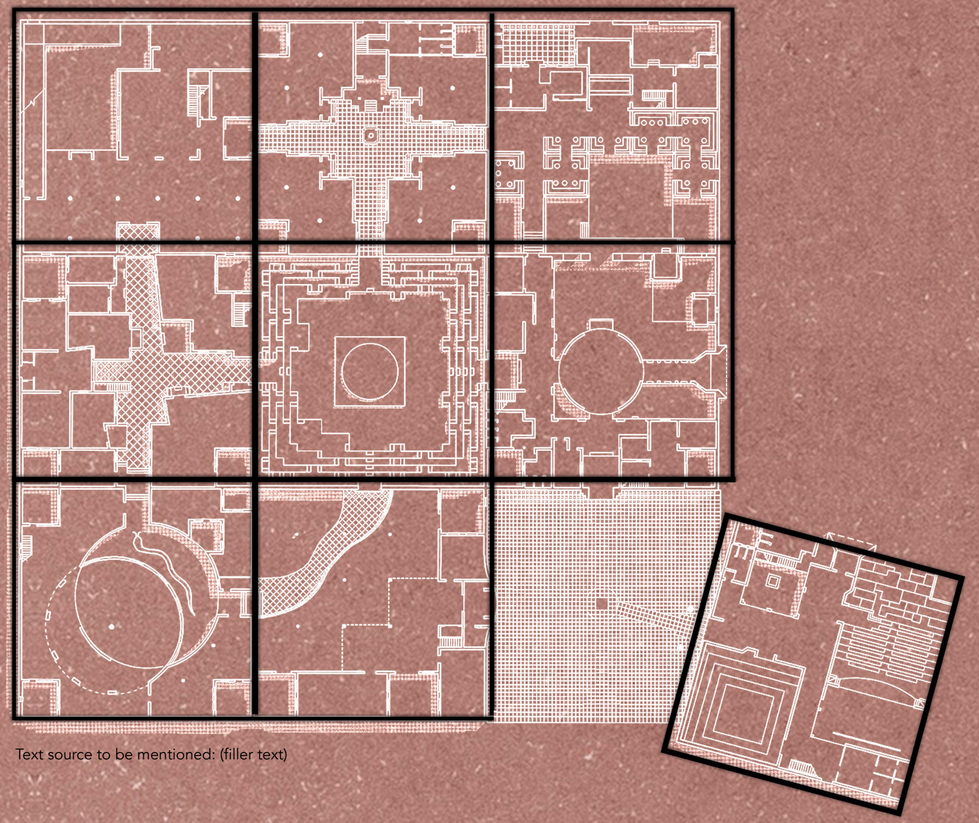
Jawahar Kala Kendra | Charles Correa



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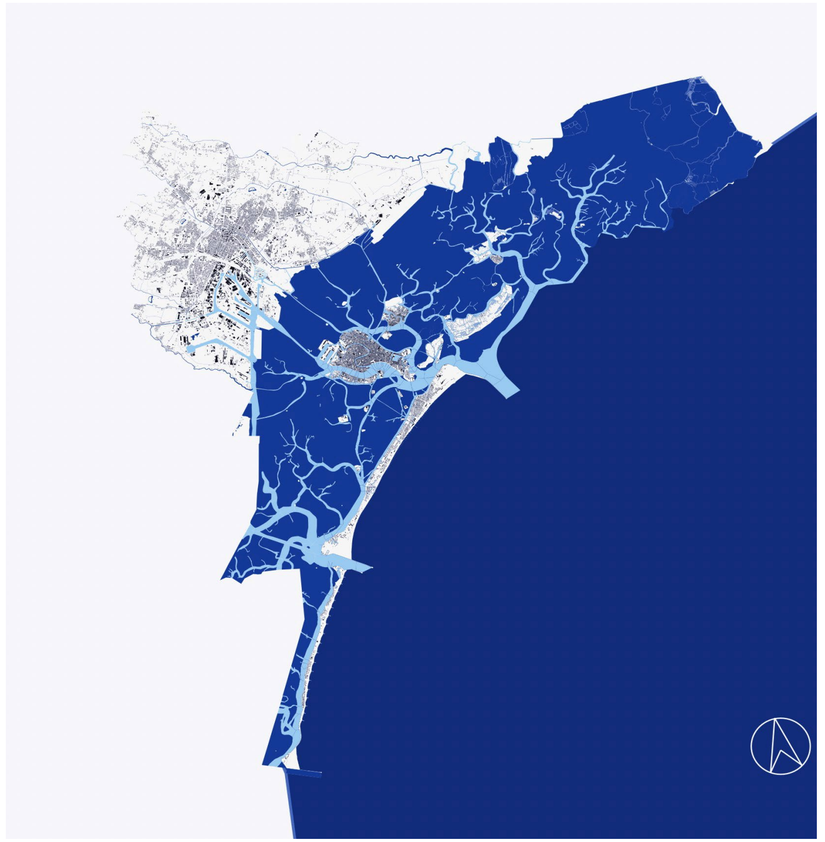
Chapter 2:

VENICE HOSPITAL | LE CORBUSIER

WHY VENICE?

This chapter explores Le Corbusier's transformative approach in his Venice hospital project, a pivotal work late in his career. Departing from earlier grand urban schemes, Le Corbusier shifts focus to a human-scale design influenced by Venice's intricate urban fabric. Through firsthand observation and integration of local elements, he redefines architectural principles, emphasizing intimacy and contextual relevance. This project serves as a testament to Le Corbusier's ability to innovate while reflecting deeply on his own architectural legacy.



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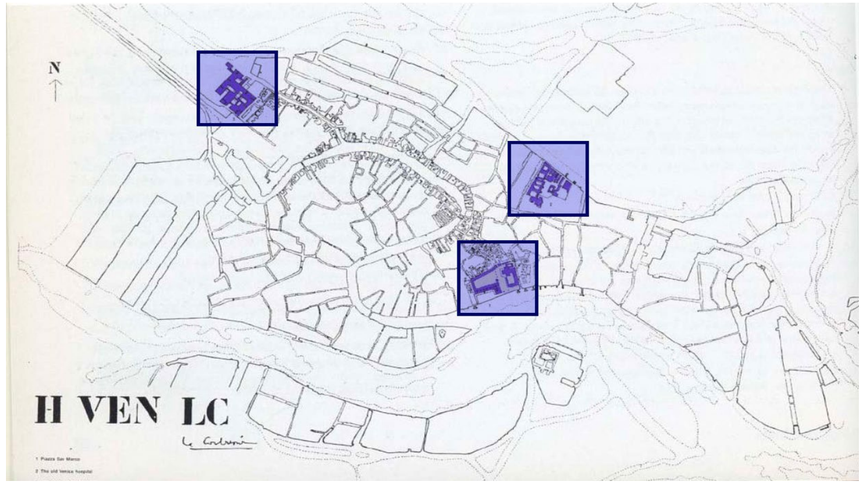

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UNVEILING LE CORBUSIER'S UNBUILT VISION

Two distinctive features of Le Corbusier's work, both as an artist and architect, were his reworking of ideas from his early works and his ability to transform himself. Two of his final projects, Venice and the Zurich pavilion, exemplify this ability to present completely new avenues of exploration while seeking inspiration from his own oeuvre. The project for the hospital in Venice is particularly intriguing because it not only proposes a new approach to urban organization and circulation but also introduces a novel concept of living.

By 1964, when Le Corbusier began contemplating the Venice hospital project, he had started to lose faith in the grand scheme approach to urbanism. Instead of designing for an entire city, region, or even a block of flats, he began to invert the process and focus on the individual. His fascination with the urban structure of Venice, a dense and automobile-free maze of streets, alleys, and little squares, prompted him to work from the bottom up. This lesson from Venice inspired him to modify his approach at the age of seventy-seven.

According to Guillaume Jullian de le Fuente (1931-2008), Le Corbusier's primary assistant in the Venice Hospital Project:

"This project remains a kind of 'témoin' (witness) in which Le Corbusier introduces all his principles and theories, leaving the door open to what has to come after. In this, his architecture is not only a solution to a specific problem but also an opening."

"If you take small pieces of the hospital, you can relate them to Venice... The entire project was organized like that. All the circulation corridors and halls in the hospital are named after our [Le Corbusier and his team's] own experience of the city... it is its integration into the life of the city that matters. And Le Corbusier discovered the essence of the city of Venice—its structure and its light—not on the drawing board but by observing and traversing it for a long time."(1)

HISTORY OF THE PROJECT

The aim of this research is to provide an overview of Le Corbusier's unbuilt Venice Hospital project, exploring its potential as a constructed reality and delving into the planning solutions embedded within its proposed structure. The envisioned Venice hospital project, slated for construction in 1964 in the San Globbe neighborhood at the edge of the Canareggio area in Venice, was commissioned to address the needs of acutely ill patients. This study focuses on analyzing the project up until Le Corbusier's death, specifically examining the first two phases (1964-1965) of its development.

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"...it is very important to remark that the idea was not to create a block or wall towards the city... in Venice, there is this special characteristic called the transenna, that is the way buildings, water, and light merge into a completely different condition where they are not single buildings anymore but a whole architectural compound."(2)

UNRAVELING THE CREATIVE FORCES BEHIND A COSMOPOLITAN WORKING CITY

The envisioned Venice hospital project, slated for construction in 1964 in the San Globbe neighborhood at the edge of the Canareggio area in Venice, was commissioned to address the needs of acutely ill patients. This study focuses on analyzing the project up until Le Corbusier's death, specifically examining the first two phases (1964-1965) of its development.

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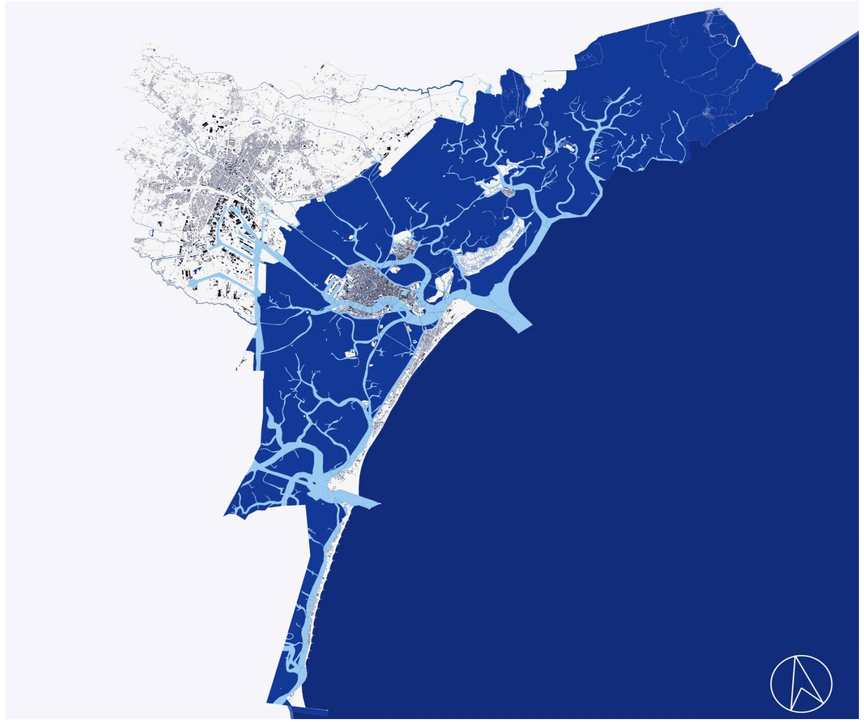
Emerging from a tapestry of interconnected islands, Venice embraced classical architecture during the Renaissance, serving as a conduit between the conscious creativity of artists and architects and the unconscious collective creativity that gave rise to an extraordinary urban landscape. Centuries later, Venice would challenge its own traditions by inviting Le Corbusier, in the post-war era, to conceptualize a modern hospital design. Drawing inspiration from Venice and diverging from his early twentieth-century visions of a clean slate approach, the archetypal Modernist proposed a radical design, prompting a reconsideration of architecture and the city as adaptable urban environments.

Three main objectives of this research paper are:

1) Venice, the city,
2) Invisible Cities, and
3) The Venice Hospital

It is an opportunity to explore architecture and cities as a matter of authorship, asking how they are generated, how they function, who makes them, and for what purpose.

If Venice provided inspiration for one of the twentieth century's most creative minds, what are the mechanisms by which this was accomplished, and how does the Hospital inspire the imagination?



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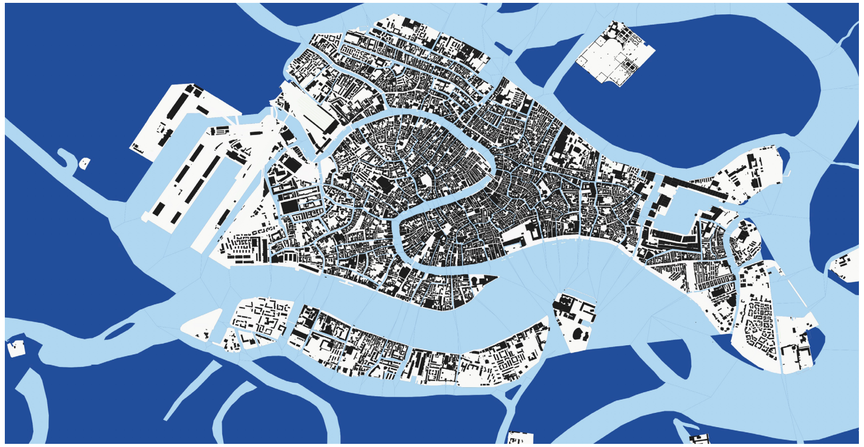

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A NON-TYPICAL YET PARADIGMATIC CITY

Venice is a non-typical yet paradigmatic city. Its urban development is a story of conquering space where once there were only mud flats and shifting sands. In contrast to the instability of its boundaries and foundations, as a human institution, it has a long and stable history. It is a self-made city on the margins of territorial borders and a fragile ecosystem. In the annals of the evolution of urban creativity, in the fourteenth and fifteenth centuries, it is Florence rather than Venice that is considered one of the world's most creative places.

The envisioned Venice hospital project, slated for construction in 1964 in the San Globbe neighborhood at the edge of the Canareggio area in Venice, was commissioned to address the needs of acutely ill patients. This study focuses on analyzing the project up until Le Corbusier's death, specifically examining the first two phases (1964-1965) of its development.

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VENICE'S PARADOX: FROM DECLINE TO RESILIENCE, A SOURCE OF INSPIRATION FOR URBAN INNOVATION

The fifteenth century was the time when Venice began to fall into decline, and thereafter, it continued to diminish in power, relegated to serving Romantic fantasy in the industrial revolution and mass tourism at the time of intense globalization. To many people, today's Venice is about a maze of alleys, spaces crowded with people, cruise ships dwarfing dilapidated palaces, looming environmental threats, an egregious lack of modern conveniences, and inhabitants in defense against tourist invasion.

Yet, Venice, in its heyday, had formed a network of trading contacts halfway across the world and remained inviolate for a thousand years as the 'richest, safest, best-ordered, and most beautiful city'. Just as Venice defied its geographic location by flourishing in the precarious conditions of the lagoon, it has commanded astonishment disproportionate to its faded significance and multiplicity of problems.

Despite the enduring uncertainty about its physical survival and the challenges in regenerating itself, Venice has never ceased to inspire architects, artists, and writers. Five hundred years after its zenith, it still contains lessons for other cities as a resilient urban environment. Scholars, artists, and practitioners alike identify something within Venice that is capable of nurturing human ingenuity.

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Lewis Mumford saw its urban structure as involving a series of bold adaptations, which had universal application. Le Corbusier admired its functional efficiency in intersecting and separating the aquatic realm and terrestrial routes and attributed the inspiration for his Venice Hospital to the Venetian typologies of calle (street) and campiello (square). Kevin Lynch described Venice as the 'imageable' city par excellence. For Calvino, Venice was a prototype for the future. Having bypassed the phase in human history where most people believed the future belonged to the car, Venice was for him in a better position to overcome the urban crisis and form a model for new developments out of its own experience.

Venice is like great architecture and great literature, locally communal and eternally global.

EXPLORING THE CONTRASTS OF ORGANIC, CLASSICAL, AND MODERN STYLES

Organic, Classical, and Modern - Venice has never ceased to be a center of attention, with its colorful mix of buildings and diverse architectural styles. But nowhere does the city express the contradictory trends between the vernacular and innovation more powerfully than in the striking contrast of Baldassare Longhena's and Andrea Palladio's white churches in Dorsoduro and the islands of San Giorgio Maggiore and the Giudecca with the medieval urban fabric (Figure 0.3). No other city can more characteristically exhibit the break that architecture made with the past and its capacity to imagine bold alternatives.

Clearly recognizing this contrast and Palladio's place in architectural history, Le Corbusier inscribed his project for the Venice Hospital on a map together with Palladio's church of San Giorgio Maggiore, showing that he was measuring himself against a lineage that stretched from Vitruvius to the classical architect. Le Corbusier's map documents three significant instances in the history of the urban formation of Venice: first, Venice's organic collection of islands and buildings embedded in the medieval fabric; second, Palladian Classicism framed by the lagoon, pointing through subtle alignments of monuments and their frontages to a coordinated scenography of the major civic spaces of the city; and third, his post-war concern with evolutionary urban growth, through his Hospital project, which, unlike early Modernism, saw the city as a single project of continuous adaptation. Through this map, Le Corbusier offered a condensation of three major paradigms that influenced not just Venice but also the canon of Western cities and architecture in general: the Organic (reflected in Venice's urban fabric), the Classical (embodied by Palladio's San Giorgio Maggiore), and the Modern (epitomized by the Venice Hospital). Venice seamlessly combines these three key practices, demonstrating how architecture as a liberal art intersects with the evolutionary processes of the medieval urban fabric.

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VENICE'S ORIGINS AND EVOLUTION

Unlike Charles Dickens and Gustav Aschenbach, who made their passage by sea, today most visitors arrive in Venice by the causeway connecting the mainland with the island city, one of the most important nineteenth-century modernizations. Even from this way of entering, from the terminus of Santa Lucia and the streets of Cannaregio bustling with tourists and the daily routines of the city, Venice strikes the visitor at once with its singularity. Unlike cities that developed on terra firma (solid land), Venice had no previous site, no previous settlement, nor a history of urban planning. Its foundation dates back to the Dark Ages when, fleeing the Lombards in the sixth century, refugees from the Paduan plains settled in the relative safety of the lagoon and its marshes.

The lagoon was dotted with sandbanks and low islands emerging at low tide. Between them lay natural channels scoured out by the action of tidal and river currents. Separated from the Adriatic Sea by a chain of littoral islands (the lidi), the city gradually emerged from this archipelago, century after century conquering new territory by dredging, annexing pieces of land, and linking isolated islands. In the seventh century, the first settlements in the lagoon were already thickly populated. As they grew, their shores were extended, and mud flats were made habitable by filling with material dredged from the canal bottoms. By the late fifteenth century, Venice had been transformed from a collection of islands to a compact city, crisscrossed by canals, an extensive pedestrian network of alleys, and a dense urban fabric.

LE CORBUSIER'S VENICE HOSPITAL PROJECT: FROM URBAN THEORIES TO ARCHITECTURAL INTERVENTION

In 1059, the civil hospital administration of S. Giovanni e Paolo in Venice formally acknowledged its inability to meet the growing demands of modern medical facilities, and a proposal was put forward to construct a new hospital in the S. Gobbe area, towards the northwestern periphery of the city. The proposed hospital, as discussed below, required both an architectural and urban solution. The civil hospital administration, from the outset, remained very keen on enlisting the atelier of Le Corbusier to design the new hospital for Venice.

During the 1950s and 1960s, Le Corbusier's international influence stemmed as much from his architecture and architectural theory as from his publication and exhibition of urban-planning theories. This urban theory developed in four main phases. The first grew from early interest in the Picturesque and was expressed in a manuscript treatise La Construction des villes (1910-1915) based on the garden-city movement and Camillo Sitte's work. In 1918, this gave way to a second, more radical theory of modern urbanism in Urbanisme (1924).

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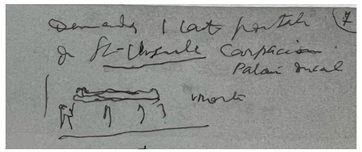
Its classification was based on a rectilinear grid, which, according to Le Corbusier, could solve the historic problems of urbanization.

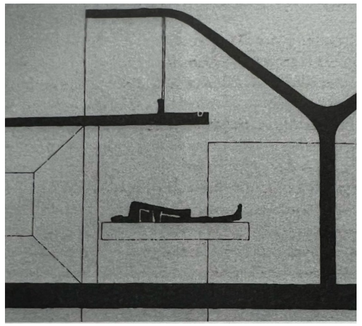
The 'Ville contemporaine' (1922) envisioned a city center peopled by tall office blocks outside of which the workers lived in garden suburbs. The application of these solutions to Paris in the 'Plan Voisin' (1925), which would have involved the destruction of most of the Right Bank, achieved the intended effect of outraging even the most sympathetic planners of the time. Le Corbusier's urban-planning theories were, however, modified over the years to accommodate his changing political allegiances. Many of his friends were involved with the Action Française, including Philippe Lamour (1903-1992), who became the leading figure in the magazine Plans (1930-1931), to which Le Corbusier contributed the articles that were later republished as La Ville Radieuse (1935), and Hubert Lagardelle (1874-1958), an exponent of regional syndicalism who became Vichy Secretary of State for Labour and encouraged Le Corbusier to join him. It was in this context that Le Corbusier developed the third phase of his urban theories of the 1930s: the 'ferme radieuse' (1933; a semi-industrialized agricultural collective) and the 'ville radieuse' (1930-1933), which involved sweeping changes to property and planning legislation. In La Ville Radieuse, he stressed the need for responsiveness to topography, and, through it making a case for high-density urbanization, the work advocates organic growth and cultural complexity rather than closed and abstracted diagrams.

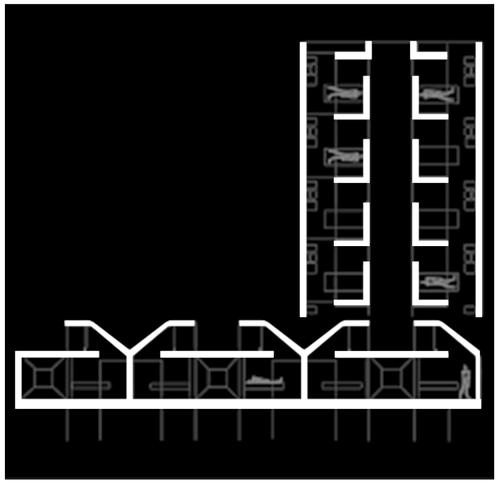
Some of this re-thinking was already evident in the urban plans for Latin American cities, Rio de Janeiro, São Paulo, and Buenos Aires among others, which date from 1929. At about the same time, he also got engaged in major debates with urban planners in Moscow who favored the linear city, publishing in 1930 his 'Reply to Moscow', this formed the basis of the 'Ville Radieuse' exhibited at CIAM lil in Brussels. The Algiers projects (1931-1942) also belong to this third phase: his first proposal, the 'Plan obus' (1932), features a spectacular building incorporating a road on its roof, which curves around the cliff-top contours like a whiplash. It was designed to relieve housing pressure along the coastal strip. The administrative center of the Western city was concentrated in one great building, variously placed in succeeding schemes, with the kasba left intact. A number of variants were proposed over the Scheme, but even his Plan directeur" (stripped of most of the original Plan obus ideas), prepared under the Vichy administration in 1942, was rejected.

The final phase began during World War II when Le Corbusier rethought his whole approach to urbanism. He published La Maison des hommes (1942) and his version of tie charted'/athènes (1943). In 1943 he also set out to re-establish himself in Paris, founding ASCORAL (Assemblée de constructeurs pour une renovation architecturale, which gave him the anonymity he needed to prepare for postwar reconstruction and a fresh theoretical start.

Vittore carpaccio, Martyrdom of the Pilgrims and the Funeral of St Ursula







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-war reconstruction and a fresh theoretical start. Material produced by ASCORAL appeared in Les Trot Etablissements humains (1945) and Manière de penser l'urbanisme (1946). Here it was proposed that 'fermes radiuses' would be linked to linear cities of 50-100 km in extent, which in turn connected the historic radial cities, which would be restricted in growth (to combat the flight from the countryside). In practice, however, Le Corbusier resigned himself to the realization that his urban interventions were likely to remain at the scale of the Unité d'Habitation at Marseille (1945) rather than whole cities. Not until the Venice hospital project (1964-1965) was there a suggestion of a move towards a new and more culturally complex kind of urban intervention, but unfortunately this phase could not be fully developed as is noted below.

On 15 November 1961, Le Corbusier received an invitation from the Venetian administration to attend a conference on the future urban planning of the city of Venice. This can be viewed as the 'official starting point of Le Corbusier's involvement in the architectural and urban discourses that were taking place in Venice at the time.

LE CORBUSIER'S PRELIMINARY SKETCHES AND NOTES

This initial visit became the basis for Le Corbusier's preliminary sketches and notes on the city's artistic and socio-historic legacy. During the August 1963 tour of Venice with Mazzariol, Le Corbusier drew a sketch depicting Carpaccio's 'Funeral of Saint Ursula' (1490-1495). It is important to note here that Carpaccio was very much concerned with representing Venetian life and the city. The above painting is part of a series in which a narrative unfolds as figures move through architecturally defined spaces. Carpaccio does not enclose the narrative within interiors but maintains a close interplay between interior and exterior.

EXPLORATION THROUGH CARPACCIO, CANALETTO, AND JACOPO DE' BARBARI

According to Guillaume Jullian de la Fuente, Le Corbusier instructed his collaborators to observe and carefully interpret the idea of the city depicted in the paintings of Carpaccio (1450-1525) and Canaletto (1697-1768). Both artists served as references for different aspects of the city. The idea of Venice, as informed by Canaletto, provided insights into a certain kind of space and the organization of that space. Canaletto focused on the fabric of the city, presenting the island as a stage set with references such as the Ponte Vecchio, the Palazzo Ducale, and the San Marco. On the other hand, Carpaccio's work emphasized the activation of this stage by depicting the unique way the island is inhabited by its citizens. Both Canaletto and Carpaccio went beyond depicting Venetian urban life at specific periods; they

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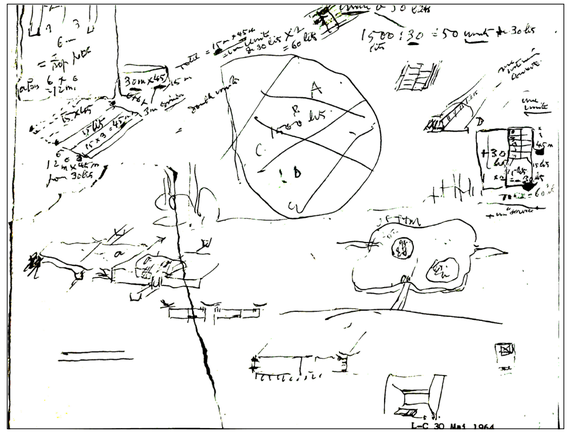
conveyed an idea of atmosphere and a field condition inherent to the city and its art. The team also drew from the Pianta Prospettica di Venezia del 1500 by the Italian engraver Jacopo de' Barbari (1440-1516). Carpaccio and Canaletto captured the ambiance of the city through its citizens, showcasing their routine jobs, habits, celebrations, and day-to-day existence. Le Corbusier considered these depictions crucial for understanding the physiology of the city, examining how it operated within and outside its operational field. Similarly, the woodcut by Jacopo de' Barbari offered Le Corbusier an excellent documentation of the urban fabric, providing a detailed aerial view of the city's squares, patios, canals, and gardens, essential elements of the island environment.

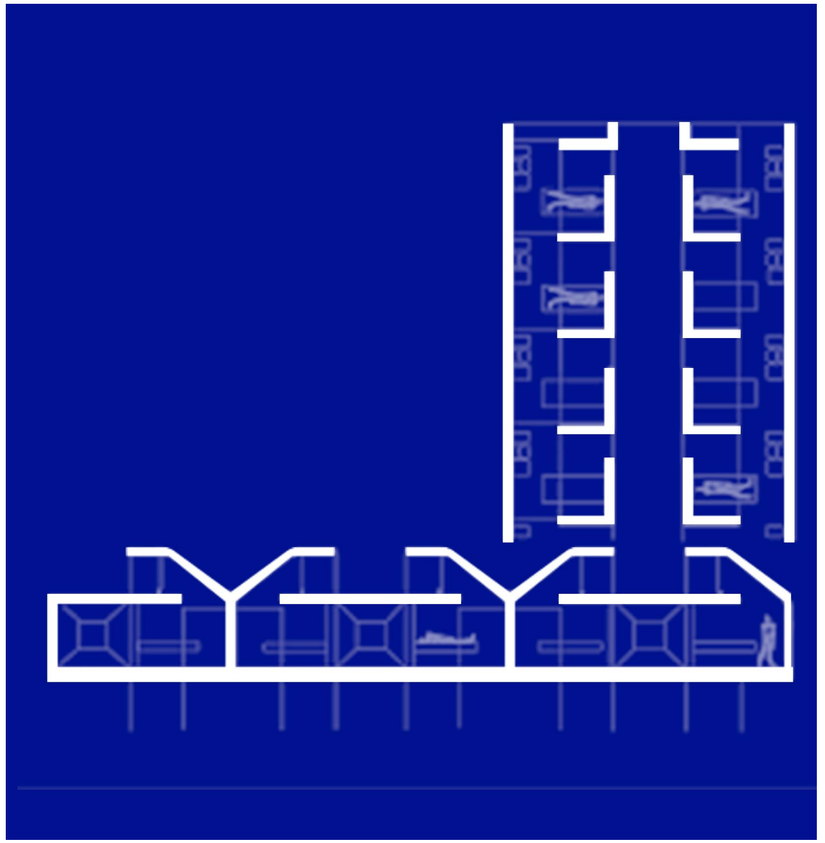
LE CORBUSIER'S QUICK SKETCH AND ARCHITECTURAL CONCEPTS

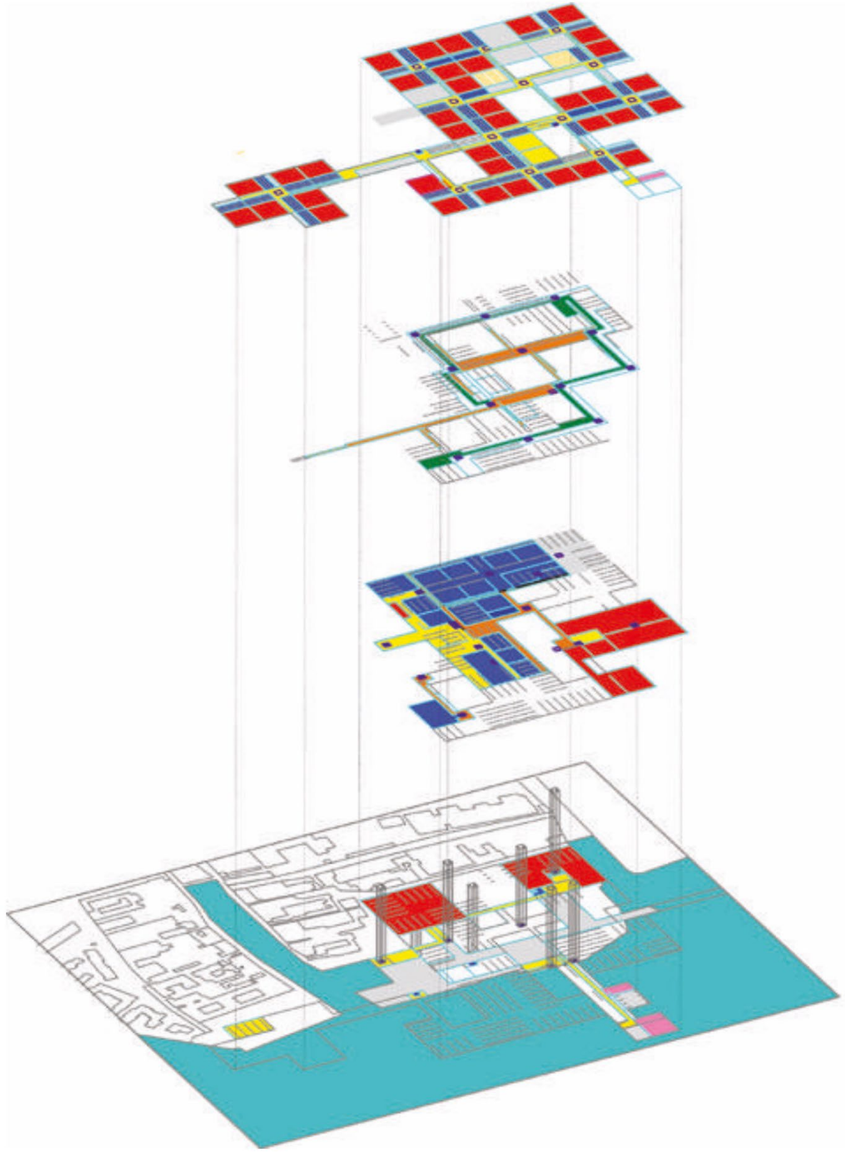


In a swift and spontaneous sketch, Le Corbusier captured his initial thoughts and ideas for a project. The sketch, created effortlessly, aimed to convey the essence of his early concepts. Le Corbusier expressed a particular interest in buildings that organically evolve from their internal dynamics. The lower right half of the sketch depicted the notion of an amorphous shape growing from within. Moving to the upper right corner, another part of the sketch outlined the initial idea for the first unit dedicated to the sick. In the lower left half, a square-ish plan with an inner courtyard took shape, while slightly to the right, the concept of light descending from above was explored. Guillaume Jullian de la Fuente mentioned that this sketch was shared with Professor Mazzariol in Venice. Additionally, Le Corbusier was simultaneously working on various plans, including one for a museum at La Défense, where he delved into the intriguing concept of the 'Potato Building.'

Chapter 2.2:

TECHNICAL REPORT





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LE CORBUSIER VENICE HOSPITAL , 1964

Le Corbusier's Venice Hospital, 1964, stands as a remarkable testament to his architectural prowess and has left an indelible mark on the collective architectural imagination. Distinguished from his other architectural endeavors, characterized by simple volumes, this hospital project adopts a unique open-ended logic rooted in cell aggregation.

Unlike his urban visions, which often involved replacing dense urban areas with freestanding buildings in a park, the Venice Hospital was specifically crafted to integrate seamlessly into the age-old fabric of Venice. Despite this contextual integration, the Hospital project showcases Le Corbusier's distinctive architectural language, featuring courtyards, classical proportions, and the Modulor—a design system based on human proportions and harmonious ratios. In essence, the Venice Hospital encapsulates pivotal moments that have influenced architectural practices, spanning from the Renaissance to Le Corbusier's own extensive body of work.

LE CORBUSIER'S FUNCTIONAL PRECISION

Le Corbusier, in describing Venice, likened it to a cardiac system—a testament to its functional precision. He saw the city as an intricate network that both intersected and separated waterways from pedestrian routes. His long-standing fascination with organic architecture, appreciated through movement on foot, contrasted with the fixed theoretical point often associated with baroque architecture. By 1964, when he accepted an invitation to design a new hospital in Venice, Le Corbusier had already established key tenets of Modernism in various projects and explored the concept of the architectural promenade.

In contrast to his early clean-slate approach, the design of the hospital drew inspiration from the calli (streets) and campielli (squares) of Venice. This inspiration manifested in the creation of a series of pinwheel squares with radially arranged corridors, forming a matrix for the building. The chosen location for the hospital was the San Giobbe area in the northwestern part of Cannaregio. The intention was to spatially integrate the hospital with the city, providing both road and pedestrian access.

Le Corbusier envisioned a system that could easily expand horizontally to accommodate future changes in medical care and technological innovations. In systematically addressing the complex demands of the program and the sensitive context, Le Corbusier demonstrated a thoughtful response to one of the most challenging and intricate architectural tasks of his time.

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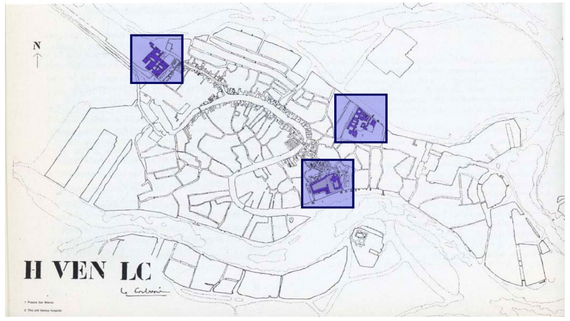
MAPPING ARCHITECTURAL PARADIGMS: VENICE'S EVOLUTIONARY TALE



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In the intricacies of Le Corbusier's map, the Hospital stands discreetly behind the Santa Lucia train station, a deliberate placement connecting it to Palladio's San Giorgio Maggiore at the forefront of Venice (Figure 0.4). This spatial arrangement, with selected structures and omissions, orchestrates a visual dialogue linking the Hospital at the 'backdoor' to the celebrated front of the city through the Grand Canal. The dotted landmarks along the canal include patrician palazzi, the Rialto market, the Merceria, Piazza San Marco, and the Piazzetta.

Le Corbusier's map serves as a synoptic notation of architectural history, encapsulating three pivotal canonical moments. First, the evolutionary urban form of Venice, embodying the Organic paradigm, acknowledges the gradual accumulation of buildings and spaces with an emergent spatial logic over time. Second, the Classical paradigm, represented by San Giorgio, the Piazza, and Codussi's Ospedale Civile, is rooted in designs and thought systems from classical antiquity. Finally, the map unfolds the Modern paradigm, stemming from the early twentieth century, breaking with historical forms and ushering in new models for city and building design.

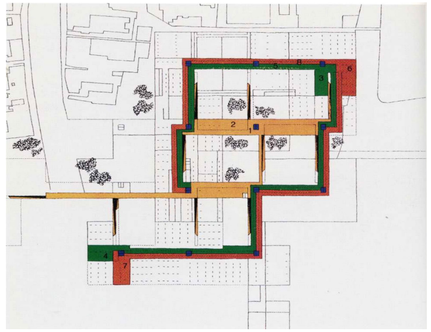
This synthesis of paradigms in Le Corbusier's map harmonizes the Modernist concept of tabula rasa—working afresh and innovating with each project—with the understanding that cities and buildings evolve over time. It also pays homage to the enduring values of Classicism across different eras. The map, as a synecdoche of these three periods, becomes a testament to the trajectory of architecture. Each structure on the map becomes a record expressing a paradigmatic shift, a deviation at critical moments from established models, shaping the ever-evolving tale of architectural innovation.

GROUND FLOOR PLAN

1 Gondolaport
2 Carport
3 Patient entrance and emergency care
4 Administration entrance
5 Administration
6 Entrance to social medicine
7 Visitors' entrance
8 Obstetrics and gynaecology centre
9 Entrance for nurses and nuns
10 Chapel entrance
11 Service entrance
12 Services of gondoloport
13 Bridge connecting to vehicular Road
14 Central pharmacy
15 Kitchen
16 Laundry
17 Linen
18 Shop
19 Building maintenance
20 Chapel and morgue
21 Chaplain's residence
22 Paediatric hospital entrance

FIIRST FLOOR PLAN

1 Patient entrance and emergency care
2 Reception
3 Emergency care
4 Emergency operatingrooms
5 Beds
6 Beds
7 Office
8 Patient entrance
9 Gurney elevator
10 Operating rooms
11 Transfusion centre
2 Diagonistics services
13 X-ray
14 Radiotherapy
15 Therapy
16 Laboratories
17 Nurses
18 Nuns
19 Free clinic
20 Meeting rooms and amphitheatre
21 Maternity wards
22 Free clinic
23 Pharmacy



MEZZANINE FLOOR PLAN

1 Patients' paths "conduits" linking to level 2
2 Storage
3 Clean items service
4 Maternity clean items service
5 Clean items 'conduits' and storage
6 Soiled items service
7 Maternity soiled items service
8 Soiled items 'conduits' and storage

THIRD FLOOR PLAN

1 Visitor's Entrance
2 General Medicine
3 General Surgery
4 Neurology
5 Neurosurgery
6 Thoracic Surgery
7 Urology
8 Dermopathy
9 Otology
10 Stomatology
11 Cancer Surgery
12 Obstetrics and Gynaecology 13 Paediatrics
14 Patients' Living Room
15 Church

Text source to be mentioned: (filler text)

DESIGNING FOR HORIZONTALITY: LE CORBUSIER'S INNOVATIVE LAYOUT OF THE VENICE HOSPITAL

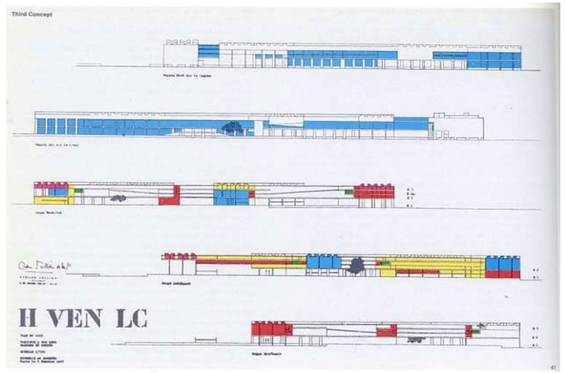
Le Corbusier strategically organized the Venice Hospital to emphasize its horizontal extension, layering it vertically with the patient area situated on the top floor. This floor adopts a pinwheel pattern of squares and pathways around a central space, housing patient rooms arranged as a matrix of building units. Each unit, marked by a square and a lift at intersections, caters to specific treatments, from gynaecology and paediatrics at the front to the neurological unit at the rear left. Patient rooms open only at the top, creating a cave-like section to draw light inside while limiting views to the exterior. A service mezzanine floor aids sterilization processes through specialized conduits, and ramps facilitate communication between the top floor and departments like surgery, radiotherapy, pharmacy, and doctors' offices on the first level. The first floor encompasses facilities such as emergencies, diagnostics, a free clinic, maternity ward, laboratories, theater, and a morgue. The ground floor accommodates entrances, administrative offices, and services, accessible by both water and road. A chapel on the north-west side serves as a landmark, reminiscent of San Michele's island cemetery. This innovative design reflects Le Corbusier's commitment to both functionality and aesthetic coherence within the hospital's architectural framework.

HORIZONTALITY IN HEALTHCARE

Le Corbusier's Venice Hospital challenges the traditional verticality of hospitals, presenting a groundbreaking "horizontal hospital" with three main levels. The ground level serves as a connection to the city, housing general services with accessible public entry points by water, foot, and from the lagoon bridge. The second level focuses on preventive care, specialized medical technology, and rehabilitation, while the third level accommodates hospitalization and visitor areas. With an overall height of 13.66 meters, mirroring the city's average building height, the first and second levels each have a height of 5 meters, intermittently divided into 2.26-meter sections. The third level is 3.66 meters tall, reduced to 2.26 meters in specific areas. Le Corbusier's departure point for the hospital design was the patient room (cellule), creating a "care unit" for twenty-eight patients, organized around a central communication space (Campalo) and four paths (Calle) for circulation and patient inhabitation during convalescence. The hospital's innovative framework, composed of interchangeable building units, evolves horizontally as needed, allowing flexibility for medical advancements and future growth. The interconnected care units receive indirect natural light to optimize patient conditions. Patient comfort is prioritized, recognizing that more comfortable hospitalization leads to more effective and economical care. Emphasizing preventive and rehabilitation capabilities, the second level is designed for medical staff, promoting teamwork and sharing of medical services, such as radiology, laboratories, and operating rooms, among various hospitalization services.

Text source to be mentioned: (filler text)

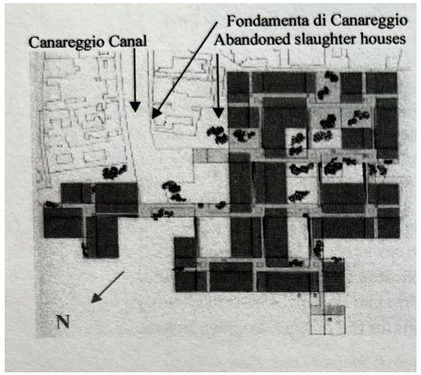
HUMAN-CENTRIC HEALTHCARE INTEGRATION



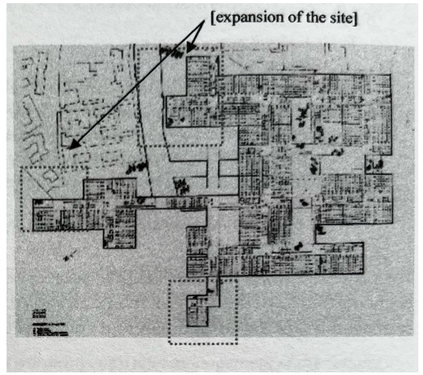
Le Corbusier's design philosophy for the Venice Hospital emphasizes a human-centered approach to healthcare integration, revolutionizing the traditional hospital experience. By opening the ground floor directly to the city, Le Corbusier facilitates a dynamic encounter between the hospital and the urban environment. This design not only visually communicates medical activities to the outside world but also ensures that outpatients, those seeking rehabilitation, and individuals concerned about their health have easy access to services like prevention, therapy, and rehabilitation.

The integration of facilities such as hotels, restaurants, cinemas, and shops allows patients to receive treatment without hospitalization, optimizing the use of available beds for those who require inpatient care. The concept of intensity of treatment prioritizes the well-being of individuals, emphasizing a human scale of construction centered around the "cellule" – the basic building block of the hospital's entire conception.

The "Unite de sains," the "Campiello," and the "Calle" are integral elements fostering connections between patients and the city. Specific functions, including patient check-in, emergency care, and visitor services, all have designated points of contact at level 1, organized vertically to lead to corresponding levels and spaces. The horizontal network of shallow ramps on the fourth floor is exclusively reserved for patients and medical staff, ensuring their circulation while restricting unauthorized access to service areas. The fifth story is dedicated entirely to hospitalized patients and their visitors, providing a comprehensive and integrated healthcare experience.



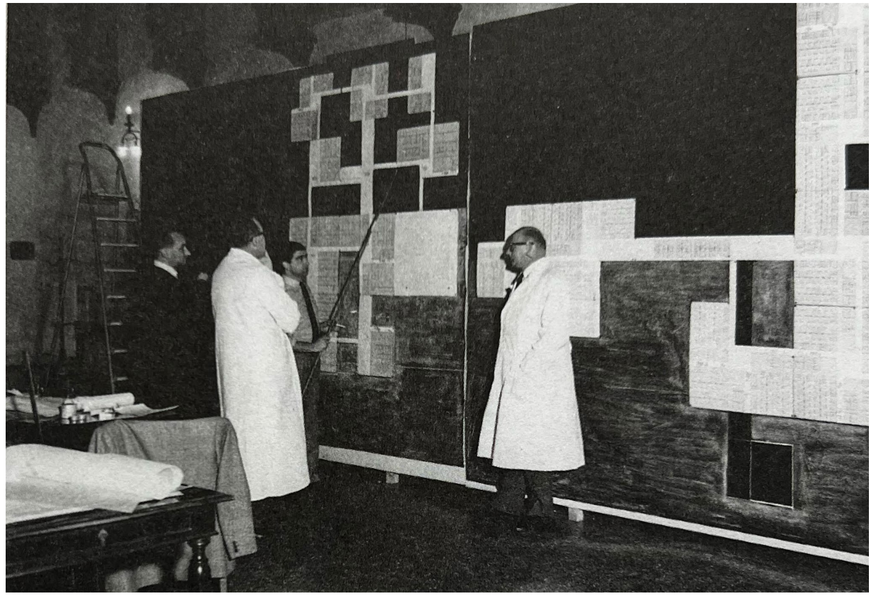
First project: 1964 |



Second project: 1965

First project: 1964 | Dynamic Configuration: Pinwheel-Shaped Units Forming Rotating
Connections

Second Project, 1965 | Expansion and Relocation: Additional Units of Care and Facilities, Church Moved Toward the Cannareggio Canal



On October 31, 1964, Le Corbusier took a significant step in the Venice hospital project by sending the plans for the first project, featuring 1500 beds. Accompanying these plans was a detailed 1:100 scale model, notable for its detachable nature at three distinct levels. This submission marked a pivotal moment in the initiation of the design process, showcasing Le Corbusier's vision for the hospital's layout and functionality.

EVOLUTION OF LE CORBUSIER'S VENICE HOSPITAL

This section traces the progressive development of Le Corbusier's Venice Hospital project through three key iterations spanning 1964 to 1966. The first iteration, represented by the colored plans from 1964, establishes the project's conceptual outline with broad strokes. The second iteration, reflected in the Rapport from 1965, addresses programmatic complexities, while the third iteration in 1966 introduces the construction logic.

Examining these phases provides insight into the project's evolution, showcasing its conceptual genesis, urban density considerations, and the refined programmatic compartmentalization along with the logic governing internal circulation.

The primary distinction between the first and second projects lies in the addition of a mezzanine level on the initial floor [Level 1a], coupled with the decision to relocate the church from the western periphery of the site towards the Canareggio Canal. In the 1965 second project, the hospital was also granted the option to expand beyond the abandoned slaughterhouses on the north-western periphery of the city. This expansion included the site, which contained part of the early 20th-century housing scheme, directly facing the Fondamenta di Canareggio, across from the Canareggio Canal

KEY MILESTONES IN THE DESIGN PROCESS: ATELIER LE CORBUSIER'S INVOLVEMENT IN THE VENICE HOSPITAL PROJECT (1964-1965)

On December 2, 1964, the board of directors of the civil hospital officially sanctioned the enlistment of the professional services of Atelier Le Corbusier to design the hospital for Venice. Following this approval, on December 12, 1964, Le Corbusier dispatched Guillaume Julian de la Fuente and Lanfranco Virgili to engage in discussions with Hospital Director Ignazio Muner. The discussions focused on the initial project, encompassing plans for Level 3 (patient cells) and Level 2 (medical services).

In January 1965, Julian presented the project to Luigi Mariotti, the Italian Ministry of Health. Subsequently, in April 1965, both Le Corbusier and Julian traveled to Venice to submit the second project and the first model to local government and hospital authorities.

While Le Corbusier maintained tight control over the hospital project's details and development throughout 1965, he delegated the role of liaison between the hospital administration and himself to Guillaume Julian de la Fuente. During this period, Le Corbusier received various gifts, all of which were duly accepted by Jullian on his behalf.

Text source to be mentioned: (filler text)

A COMPREHENSIVE APPROACH TO PATIENT-CENTERED CARE AND MEDICAL EFFICIENCY

Level 1 remains a vital connection between the city and the hospital, integrating various services and validating the hospital's integration into the city. The multilevel approach to patient care considers the human aspect before the patient, emphasizing the scale of construction and creating relationships between the patient and the city.

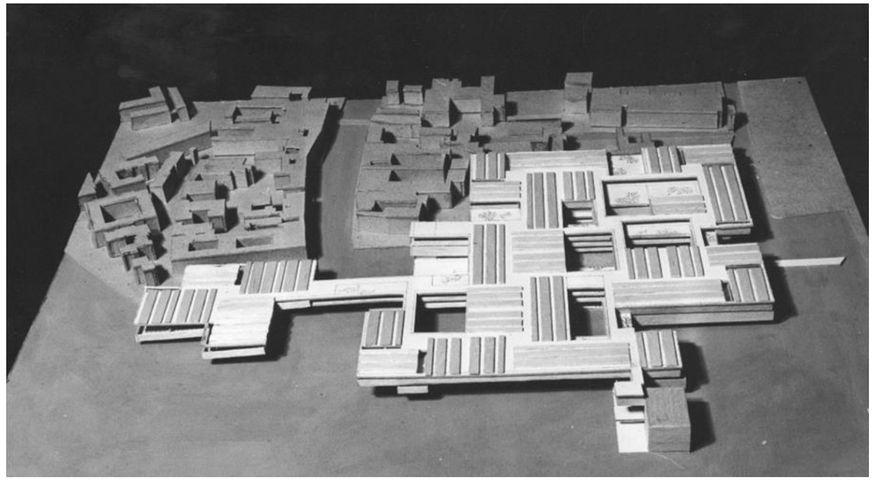
Specific functions such as patient arrivals, emergency help, and visitors are centralized on Level 1, which organizes vertically to corresponding levels. Level 4 features an independent horizontal route for medical staff and patients, ensuring exclusive use. Level 5 is entirely reserved for hospitalized patients and their visitors, with a total of 1,148 beds distributed across 41 units of care for 28 patients each.

The provided text discusses the unique design and organization of a hospital, deviating from the traditional vertical structure. The hospital is conceived as a 'horizontal hospital' with three principal levels. The ground floor serves as the connection to the city, housing general services and providing the main access for the public. The second level focuses on preventive care, special care, and rehabilitation, emphasizing medical technology. The third level accommodates hospitalization and visitor zones, maintaining a height in harmony with the city's buildings.

The design revolves around patient cells created on the Modulor scale, forming the structure of independent units of care. These units are organized around central communication spaces and conduits, promoting patient circulation post-hospitalization. The hospital's flexibility is highlighted by the attachment of additional building blocks, allowing for future growth and adaptation to evolving medical practices. Efficiency in patient care is underscored by emphasizing prevention, rehabilitation, and teamwork among medical staff. Level 2 houses medical technology services, serving all hospitalization services efficiently.

CONTRACT SIGNED

On March 29, 1965, Le Corbusier formally accepted the commission to work on the hospital project and signed the contract. The hospital administration and the Venetian intellectual and architectural community were delighted by the opportunity to have Le Corbusier design the hospital project for Venice.



© Model of the project signed by Le Corbusier.
Credits: Fondation Le Corbusier.

© April 11th, 1965 - Le Corbusier at the exhibition on his project for Venice Hospital. On his right, Carlo Ottolenghi, enterpreneur, and Ignazio Muner, medical director. Credits: Fondation Le Corbusier and Phaidra collezioni digitali.

UNFORESEEN EVENTS SURROUNDING LE CORBUSIER'S PRESENTATION AT ISTITUTO UNIVERSITARIO DI ARCHITETTURA DI VENEZIA

Le Corbusier was scheduled to present his project at the Istituto Universitario di Architettura di Venezia on April 13, 1965. However, the presentation was abruptly canceled due to an unrelated student protest on the first day of the academic year, with students expressing dissatisfaction with internal policies. Le Corbusier, visibly disappointed and holding the belief that students should prioritize their studies, decided to delegate the task to Jullian. Despite Jullian facing the faculty and students alone, the audience included notable figures such as Ignazio Gardella, Fabio Franco, Mazzariol, and the hospital director, I. Muner. Following the successful presentation, celebrated at a private dinner that evening, Le Corbusier expressed his happiness about Jullian's accomplishment, noting, "I am happy about Jullian's success." The presentation garnered immense enthusiasm and interest from both the members of the Instituto Universitario di Architettura di Venezia architectural community and the hospital administration.

LE CORBUSIER'S HOSPITAL PROJECT GAINS RECOGNITION AND ACCEPTANCE

Following the presentation at the Istituto Universitario di Architettura di Venezia, Le Corbusier's hospital project achieved widespread acceptance as a significant architectural intervention, characterized by distinctive design considerations. The project successfully accommodated the latest medical technologies while also respecting the existing typology of the medieval city.

TRANSITION AND CHALLENGES IN THE WAKE OF LE CORBUSIER'S PASSING

During a site visit on August 26, 1965, Jullian sent a telegram to Le Corbusier, seeking permission to extend his stay in Venice to further develop the hospital project. Le Corbusier's brief and decisive response was "D'accord." Tragically, the day after, Le Corbusier passed away while swimming at Cap-Martin. Overcoming the initial shock, the team chose to remain in Venice and continue the project under Jullian's direction, assisted by José Oubrerie (b. 1935). However, with Le Corbusier's sudden death in August 1965, the dynamics of the architect-client relationship came to an abrupt standstill.

Text source to be mentioned: (filler text)

TRANSITION AND CHALLENGES IN THE WAKE OF LE CORBUSIER'S PASSING

Guillaume Jullian de la Fuente, guided by Le Corbusier's teachings, perceived the essence of the Venice project as residing "in the filling between the line of the horizon that defined and limited all other activities." According to Jullian, a pivotal architectural element in this endeavor was what unfolded between the sky and the ground, the horizon and the water. In his presentation at the Istituto Universitario di Architettura di Venezia on April 13, 1965, Jullian emphasized the significance of human dimensions. He argued that, for Le Corbusier, beyond preserving the strict height dimension of the city, the next crucial challenge was establishing the architecture's relationship with water and the importance of human scale.
Quoting Le Corbusier, Jullian asserted, "Man is the fundamental coordinate, and it is the human scale that must generate the plan." Reflecting on his visit to the lagoon with Le Corbusier, Jullian described the shape of the 'Quartier' as a crucial design element replicated in the project details. The project evolved significantly from its inception in 1964 to the final plans of the early 1970s. Yet, the remarkable aspect is the continuity and consolidation of Le Corbusier's earlier ideas. Jullian's commitment to these ideas, according to Allard, stems from a belief in the model's efficiency and the hospital's potential as a exploration of entirely new architecture.
The interpretation and development of the project by Jullian can be further understood through the contributions of team members who joined the atelier after Le Corbusier's death. Mario Botta, a young graduate from the Istituto Universitario di Architettura di Venezia, joined the atelier after the decision to establish a second small atelier in Venice. In an interview conducted in 1999, Botta reflects the atelier's sense of direction and commitment to the hospital project, as envisioned by Le Corbusier. Notably, the interview also includes opinions from Robert Sordina and Renzo Dubbini on the project's importance, providing a collective reflection of its significance.

Giuseppe Mazzariol and Guillaume Jullian de la Fuente showing journalist the model of the patient's cell. November 1965.55 @ Fondo Ospedale Civile di Venezia - ULSS Veneziana

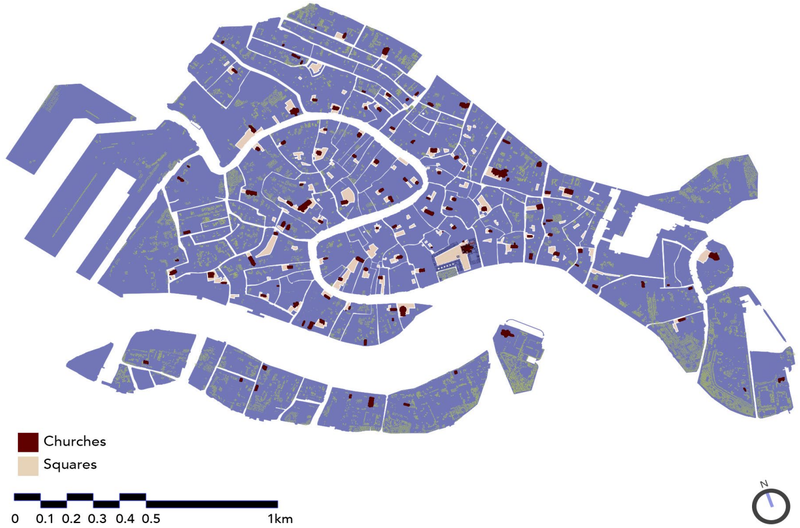
Chapter 2.3:

ASSEMBLING THE CITY

The physical features and medieval layout of a city offer profound insights into its historical evolution and cultural development. This chapter explores essential aspects of historical analysis that illuminate the city's past and continue to influence its present form. By examining geographical context, fortifications, street patterns, architecture, public spaces, zoning, demographics, and cultural landmarks, we uncover how natural landscapes, defense needs, social dynamics, and cultural influences have shaped the city over time. This holistic approach provides a foundational understanding of urban morphology, essential for informing contemporary urban planning and preservation efforts

B

View of Venice, first state, 1500, Minneapolis Institute of Art



Map of contemporary Venice showing churches, campi and the Piazza San Marco.

THE CITY'S MORPHOLOGY AS THE BLUEPRINT FOR THE PLAN

In 1999, Mario Botta noted, "More than the plan, the structure of the hospital is shaped like an organism of organizational clarity that is unique. That is to say, the morphology of the city generates the plan." To comprehend this distinctive feature of the hospital project, the following analysis delves into the historical aspect of the hospital's design strategy and its proposed spatial program, which facilitates the integration of the city within its operational confines.

CITY'S HISTORICAL ANALYSIS:

The physical characteristics and medieval urban configuration of a city provide crucial insights into its historical development and cultural evolution. In conducting a historical analysis, several key aspects come into focus, shedding light on the city's past and shaping its present landscape. Unveiling the past through key elements:

Geographical Context:
Explore natural landscapes and resources that influenced initial settlement patterns.

Fortifications:
Examine city walls and fortifications for insights into historical defense needs.

Street Layout:
Analyze street patterns, squares, and alleys to understand the organic growth of the medieval city.

Architecture:
Study architectural styles and materials for technological and cultural insights.

Public Spaces:
Investigate squares, markets, and civic structures as hubs for trade, governance, and community.

Zoning and Land Use:
Explore how different zones shaped the city's economic functions and identity.

Demographics:
Track population changes to understand the city's historical trajectory.

Cultural Influences:
Uncover religious and cultural landmarks to reveal the city's spiritual and intellectual dimensions.

1. Source I (Translation by author)

"VIEW OF VENICE" - A MONUMENTAL WOODCUT PRINT FROM 1500

The "View of Venice," also recognized as the de' Barbari Map, stands as a monumental woodcut print portraying a bird's-eye perspective of the city from the southwest. It bears the title "VENETIE MD" ("Venice 1500") and was crafted from six wooden blocks designed by Jacopo de' Barbari between 1498 and 1500.

The detailed depiction encompasses Venice and nearby islands in the Venetian lagoon, showcasing locations such as Burano, Giudecca, Mazzorbo, Murano, and Torcello. The Alps along the northern horizon add to the picturesque scene. The print labels various locations and buildings, including 103 bell towers, offering a comprehensive view of the city's layout. The depiction maintains a realistic form akin to a topographical landscape, with large and important structures presented on the same scale as smaller ones. Certain areas exhibit simplified building and street plans, and the heights of structures are intentionally exaggerated, creating a visually striking representation of Venice in 1500.

VENICE'S ARCHITECTURAL HERITAGE: A GLIMPSE THROUGH CHURCHES AND SQUARES

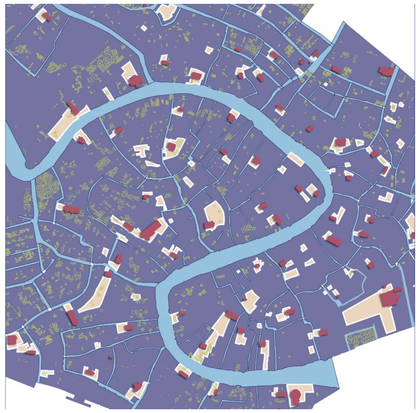
Approximately 90 churches grace the de' Barbari Map of Venice, and remarkably, many still occupy the same locations today. When distilling the plan to focus solely on churches and squares, a captivating archipelago of monuments and open spaces emerges, as illustrated in Figure 1b.

Closer scrutiny dispels the notion of a random distribution, revealing a clear logic in Venice's urban layout. By employing a property known as 'betweenness centrality' in network theory (and termed 'choice' in space syntax theory) to analyze streets, it becomes evident that squares and churches form an interconnected network, seamlessly woven through open spaces and alleys across all scales of analysis.

SOCIAL AND ECONOMIC EVOLUTION IN VENICE: THE ROLE OF PARISH ISLANDS

This property encapsulates a pattern of evolution rooted in social and economic activities dating back to early times. The campi (squares), churches, and the houses surrounding them served as the urban and social nuclei of parish islands scattered throughout the archipelago (see Figure 1.4a–b). Each parish evolved "street by street around its own church and campo." These parish squares functioned as semi-autonomous community centers, housing the residences of prominent families, places of worship, markets, stalls, artisans' shops, and benefiting from proximity to a canal

Campi and churches in Venice. Removing all other information from the map of Venice reveals an 'archipelago' of campi and monuments.

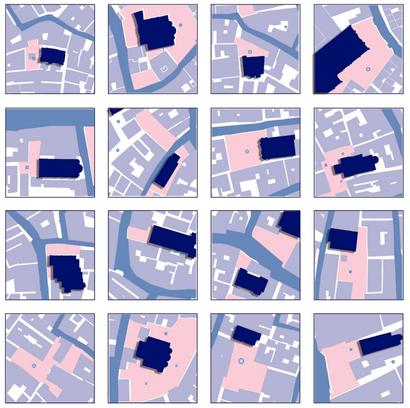


Campi and churches in Venice. Removing all other information from the map of Venice reveals an 'archipelago' of campi and monuments.

Churches
Squares
Canals

Squares, churches and wellheads in Venice.

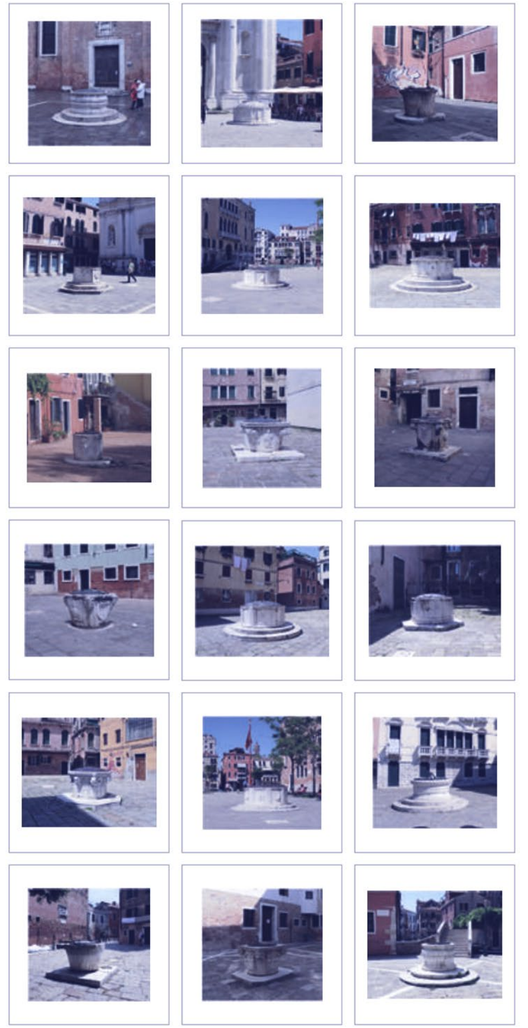
Well-heads
Squares
Churches



A selection of squares in Venice. The squares are irregularly shaped spaces, situated close to one (or more) canals, fronted by a church and comprising one or more wellheads (vera da pozzi).

Venice. A taxonomy of element-types. : A hundred profound solitudes together constitute the city of Venice. That is its charm.

Churches in Venice. 1. San Giacomo di Rialto, sestiere (s.) of San Polo. 2. San Marcuola, s. Cannaregio. 3. Santa Maria Gloriosa dei Frari, s. San Polo. 4. Sant' Aponal, s. San Polo. 5. Eastern facade of San Trovaso, s. Dorsoduro. 6. San Martino, s. Castello. 7. San Zaccaria, s. Castello. 8. Santa Maria del Giglio, s. San Marco. 9. Madonna dell' Orto, s. Cannaregio. 10. San Rocco, s. San Polo. 11. San Sebastiano, s. Dorsoduro. 12. San Pantalon, s. Dorsoduro. 13. I Carmini, Santa Maria del Carmelo, s. Dorsoduro.



Wellheads are the centrepieces of many public squares in Venice.

14. Southern facade of San Trovaso, s. Dorsoduro. 15. San Gregorio, s. Dorsoduro. 16. I Tolentini, San Nicolò da Tolentino, s. Santa Croce. 17. Miracoli, Santa Maria dei Miracoli, s. Cannaregio. 18. San Marcuola, view from Salita Fontego, s. Cannaregio. 19. Madona dell' Orto with canal, s. Cannaregio. 20. San Moisè, s. San Marco. 21. San Barnaba, s. Dorsoduro. 22. Sant' Alvise, s. Cannaregio. 23. Santa Fosca, s. Dorsoduro. 24. Santa Maria della Fava, s. Castello.

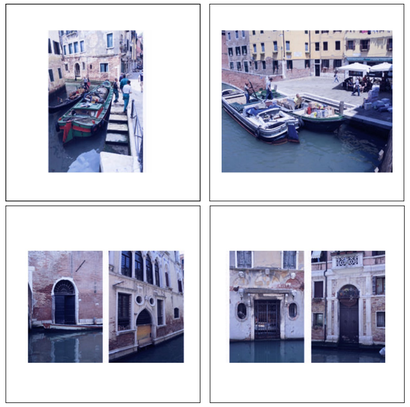
The networks of canals and alleys in Venice.

Canals
Alley
Churches

Venice. Topological step-depth from all canals. The red lines indicate one step, or one change of direction from a canal.

1 step/turn
2-3 Turn
Canals

Flights of steps linking land with the water in Venice.



The canals as major elements for the distribution of various types of resources and people.

EVOLUTION OF VENICE: FROM FEUDAL ESTATES TO AN INTERCONNECTED NETWORK

By the early fifteenth century, Venice had nearly attained its present-day form, with approximately 70 parishes, each featuring its church and square, firmly established. However, in the preceding centuries of the Middle Ages, the city's layout was radically different. Parish islands resembled small feudal estates with no streets or network of campi (squares). Wealthy families vied for dominance over individual islands, competing for control of the influential dogeship in the city's early development. As domestic politics evolved in the twelfth century, the Doge's role shifted to that of the first among equals in the Venetian commune, leading to a decline in the autonomous character of island communities.

Simultaneously, the rise of a mercantile society necessitated faster transportation over land and water. Through an extended process of land reclamation, the islands were gradually interconnected, marking a shift from the expansion of the city's periphery. Canals and fish ponds were filled, older canal courses were regularized, and the construction of bridges commenced. Main routes were established across parishes, forming a second network of land communications alongside the existing canal network. The continuous network of 'through' routes, as seen in Figure 1.3, illustrates that bridges were strategically built during the land reclamation process to connect campi and parishes, creating an interconnected network of centralities.

THE VITAL ROLE OF WATERWAYS IN VENICE'S URBAN FABRIC

Communication through water is pivotal to the numerous centralities in Venice. Seawater courses through the city's compact body, reaching the ground floor of many buildings in the form of internal quays. These quays are accessible both on foot and by boat, offering residents and visitors the option of navigating between places via land, water, or a combination of both. The intersection of water travel and pedestrian routes occurs at specific points, facilitated by traghetti and loading steps. These points are consistently positioned adjacent to bridges and squares, creating convenient access nodes

MAJOR WATERWAYS: CANNAREGIO, SAN MARCO, AND FONDAMENTE NOVE CANALS

Among the most notable waterways are the canals of Cannaregio, San Marco, and Fondamente Nove, serving as crucial connections between the Grand Canal and the peripheral navigational channels (refer to Figure 1.10). When comparing the canal routes with the pedestrian networks, it becomes evident that the former comprise fewer elements that span longer distances compared to the elements of the street network

Giuseppe Mazzariol and Guillaume Jullian de la Fuente showing journalist the model of the patient's cell. November 1965.55 @ Fondo Ospedale Civile di Venezia - ULSS Veneziana

VENICE'S WATER-CENTRIC ORIGINS: CANALS AS DOMINANT TRANSPORTATION

The distinction highlights Venice's origin in the archipelago. In a city composed of island communities, large-scale communication predominantly occurred through water. The canals persist as the primary mode of transportation for diverse resources, encompassing building materials and people, functioning as the primary infrastructural system.

MORPHOLOGY OF MOVEMENT: NAVIGATING WATER AND LAND IN VENICE

Examining the route's morphology or the directional changes necessary to transition between water and land provides valuable insights. In Figure 1.13, red lines represent straight paths, while a progression of colors from orange to green indicates one to two turns needed to move between a canal and a campo. Simple and direct connections (red lines) link campi and canals, demonstrating the ability to traverse between water and land without deviation or directional change. Figure 1.13 unveils another crucial property: as one traverses bridges along these straight routes (shown in red), a distinctive 'cross-stitching' pattern emerges, symbolizing the interconnection of squares and islands or the cohesive bonding of parish communities.

Communication through water plays a crucial role in the numerous centralities of Venice. Seawater courses through the city's compact body, infiltrating the ground floor of many buildings in the form of internal quays, accessible both on foot and by boat. Moving from one place to another offers a choice between land and water, or a combination of both. The intersection of water travel and pedestrian routes occurs at specific locations, facilitated by traghetti and loading steps, strategically positioned adjacent to bridges and squares (see Figures 1.9a–b).

Giuseppe Mazzariol and Guillaume Jullian de la Fuente showing journalist the model of the patient's cell. November 1965.55 @ Fondo Ospedale Civile di Venezia - ULSS Veneziana

Venice. Canal network and squares located within 50 metres from the highest values of normalised angular choice

Between parish communities and the state

A) Venice. View of the Piazza and the Piazzetta from the water. Image by Mariordo (Mario Roberto Durán Ortiz) – own work, CC-BY-SA 4.0 via Wikimedia Commons (https://commons.wikimedia.org/w/index.php?curid=61002136)

B) Canaletto. The Bacino of San Marco on Ascension Day. Royal Collection Trust / © Her Majesty Queen Elizabeth II 2017

Venice. Piazza San Marco, fourteenth and fifteenth centuries – hypothetical reconstruction. Adapted from Giulia Foscari W. R., Elements of Venice. Zurich: Lars Müller Publishers, 2014

A MULTITUDE OF SOLITUDES

Venice, a bustling maritime emporium, served as a vibrant crossroads where trading routes from the east and west intertwined, exchanging a myriad of goods and services such as sugar, cotton, silk, rugs, fruits, perfumes, gums, and spices. This dynamic flow of boats and rich products played a pivotal role in shaping the socio-economic practices and customs of the Venetians. The port facing the lagoon stood as an indispensable hub of economic activity, serving as the convergence point for ships arriving from or departing through the Adriatic.

Beyond the main port, various other sites functioned as small-scale mooring points and dock infrastructures, with palaces, warehouses, markets, and charitable institutions strategically positioned to either serve as docks or be in close proximity to mooring docks, facilitating water access. This dispersed distribution of elements contributed to the formation of Venice, resembling 'building blocks' that congregated to shape the city. Much like the campi, which held spatial and social identities, palaces, religious buildings, charitable institutions, trading posts, and markets served as distinct formal and social types, acting as nodes in the dual infrastructure.

Immersed in water and closely interconnected with the dual networks, these diverse sites converged to create a porous, sponge-like urban fabric. The islands and canals exhibited a repetitive pattern of typologically similar structures—squares, streets, churches, palaces, public buildings, and houses. These typologies, in turn, comprised a collection of recurring micro-elements such as steps, loading bays, bridges, wellheads, underground cisterns, and bell towers (see Figure 1.14). The evolutionary journey of these microcosms emerging from the marshes prompts a fundamental question: What transforms the repetition of these parts into a cohesive whole, forging a civic identity from island communities and a polis from these 'islands' and individual entities?

VENICE'S EVOLUTION: TRANSITION OF SQUARES FROM PAROCHIAL TO CIVIC SPACES

As Venice matured through its expansion, a notable transformation occurred: half of its squares made the shift from being strictly parochial to becoming part of the public, civic domain. The distinctive relationship of these campi with the foreground network illustrates that this urban evolution triggered tensions, particularly in balancing control over neighborhood affairs and securing a share of the resources flowing through the foreground network of the city.

VENICE'S DUAL HUBS: RIALTO AND PIAZZA SAN MARCO

Beyond the parish centers, Venice boasted two pivotal hubs: the renowned Piazza San Marco and the bustling Rialto. The Rialto, as the mercantile center, attracted merchants and foreigners from across the trading world, offering a concentration of banks, workshops, and markets. This vibrant locale also functioned as a civic administration center, where essential bulk commodities—such as iron, flour, wine, coal, and oil—were meticulously weighed and assessed for tax purposes
On the other hand, the Piazza San Marco and the Piazzetta served not only as marketplaces but primarily constituted the spiritual and ceremonial heart of the Republic. These two major hubs played distinct yet interconnected roles, reflecting the multifaceted nature of Venice as both a thriving economic center and a symbolic and ceremonial focal point for the Republic.

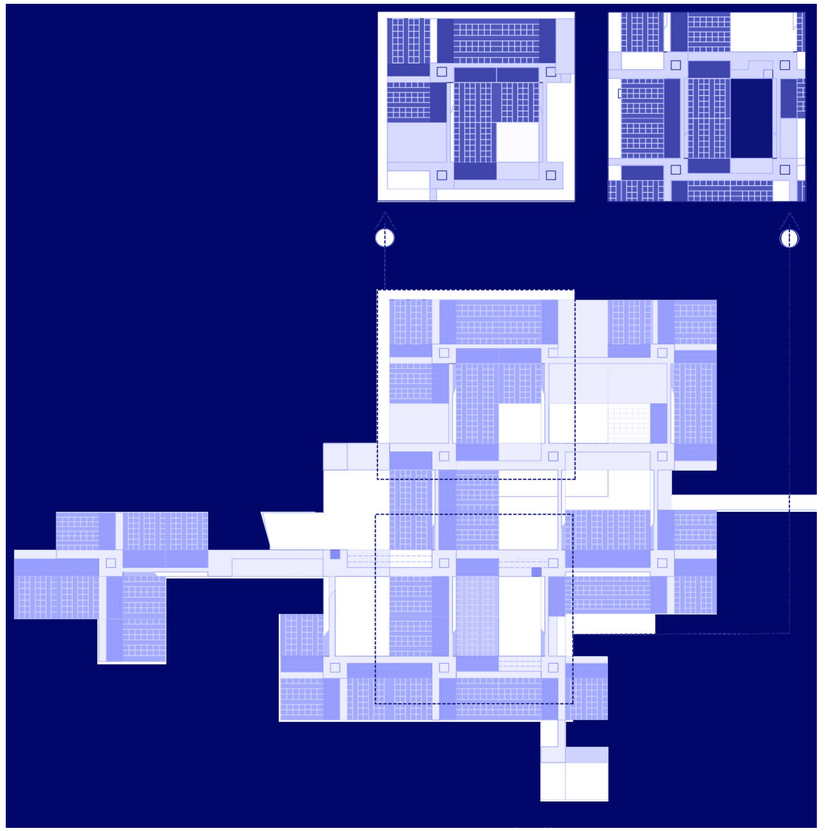
SAN MARCO ISLAND: A BYZANTINE CHAPEL AND NEW ROMAN FORUM

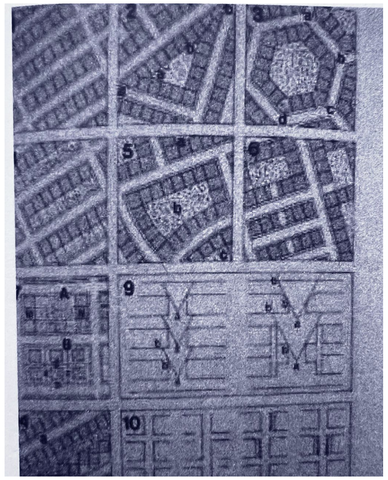
Positioned strategically to control the entrance to the Grand Canal and the route toward the littoral islands separating the lagoon from the Adriatic, the island of San Marco holds a unique significance. At its core lies the Piazza, dominated by the Ducal Palace and Basilica of San Marco, serving as the residence and private chapel of the Doge (see Figures 2.3a–b). Encompassed on three sides by the loggia façade of the Procurators of San Marco—the most prestigious group after the Doge, elected for life and entrusted with the care of the Basilica—the Piazza stands as a Byzantine chapel and a new Roman forum, embodying the historical and architectural richness of Venice. The Piazza San Marco, as it appears today, underwent its first major transformation during the 1170s under the visionary leadership of Doge Sebastiano Ziani (1172–1178). Ziani's vision aimed to create a vast space reminiscent of an ancient forum, a place where all citizens of Venice could gather to legitimize political choices. Doubling the length of the Piazza, Ziani initiated the creation of a continuous line of buildings for the Procurators. Additionally, he established the Piazzetta, placed two columns on the Molo, and expanded the Ducal Palace. Subsequent significant changes unfolded in the fourteenth century, marked by the redevelopment of the Basilica and the Palace in 1340. The Basilica drew inspiration from the Apostoleion, a Byzantine temple in Constantinople. A triumphal arch known as Porta della Carta was erected a century later (construction began in 1438), serving as the official entrance to the Palace courtyard for foreign dignitaries. In 1496, construction began on the north side of the Piazza for the Clock Tower (Torre dell'Orologio). This advanced astronomical clock, the Orologio, celebrated the entry point to the commercial thoroughfare leading to the Rialto. The Orologio featured automata that signaled the passage of both cosmological and civic time.

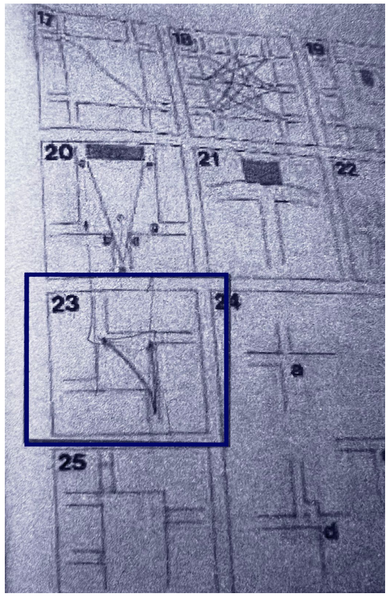
Chapter 2.4:

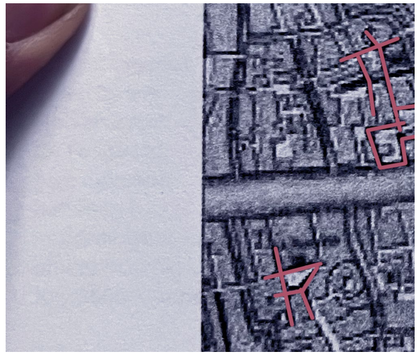
MEMORY OF THE CITY

Venice, renowned for its unique geography and historical development, serves as a profound source of inspiration for architects and urban planners alike. This chapter examines how Venice's urban fabric influenced Le Corbusier's visionary approach, particularly through his Venice hospital project. By analyzing medieval urban patterns, spatial organization across Venetian islands, and the integration of efficient movement systems, we explore Venice's lasting impact on architectural memory and contemporary urban dynamics. This study underscores Venice's pivotal role in shaping architectural theory and practice, reflecting its enduring relevance in modern urban planning.









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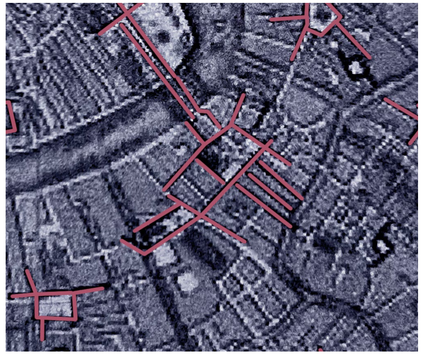

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IN-DEPTH ANALYSIS OF THE HOSPITAL PROJECT IN RELATION TO VENICE

Le Corbusier's fascination with the architectural elements of Venice is rooted in the city's historical significance as an exemplary model for urban planning. As early as the 1920s and 1930s, Venice was recognized as a prime example of urban development, and Le Corbusier extensively studied and documented its unique coherence in both customs and spatial organization. In his 1924 study "Urbanisme," Venice played a prominent role as an analytical field, and Le Corbusier classified its circulation, pedestrian-centric design, and human scale as valuable lessons.

Le Corbusier continued to emphasize Venice's importance in his work, particularly in "La Ville Radieuse" published in 1934. He highlighted the persistent elements that contributed to Venice's functionality as a city, considering it a witness to urban planning doctrine. Le Corbusier showcased traditional views of Venetian streets, bridges, and gondolas alongside modern additions like the Autorimessa garage at Piazzale Roma, symbolizing the ongoing reshaping of contemporary urban life.

For Le Corbusier, every aspect of the city, whether a calle or an architectural element, was seen in relation to the unified ambiance of Venice. This perspective, shared with Giuseppe Samond, emphasized the themes of the city, territory, and the coexistence of type and figuration. Together, they contributed to a deeper understanding of Venice's intricate urban configuration.

LE CORBUSIER'S EARLY ANALYSIS OF MEDIEVAL URBAN PATTERNS, WITH A FOCUS ON VENICE

It's noteworthy that between 1910 and 1915, Le Corbusier delved into an in-depth analysis of medieval urban patterns, specifically focusing on squares and street configurations. Although these insights were initially unpublished, they were later compiled and released in 1992 in a work titled "La construction des Villes: Genèse et devenir d'un ouvrage écrite de 1910 à 1915 et laissé inachevé par Charles Eduard Jeanneret-Gris dit Le Corbusier."

The study illuminates Le Corbusier's meticulous analysis of medieval street configurations, drawing parallels to a pinwheel system. He perceives this system as the most efficient and simple in execution, emphasizing the importance of maximizing the visible surface. The proposed system, resembling a pinwheel configuration, aligns with the urban layouts of medieval cities, including Venice. This logic allows space in the campo's periphery for significant buildings like churches and palazzos, integrating access at the corners, as exemplified in Figure 2.11 depicting the passage from Ca'Giustinian to Ca' Foscari.

1. Source I (Translation by author)

THE CENTRAL ROLE OF CAMPI IN URBAN DYNAMICS

The diagrammatic analysis above underscores the campo or 'square' as the epicenter of all activities surrounding the diverse nuclei of the city. Operating as both a commercial and urban hub, the square plays a pivotal role in the city's dynamics. In Figure 2.9, the squares at the Rialto and San Marco serve predominantly public functions, while the numerous smaller squares indicated on the map appear to cater to semi-public and semi-private activities. This distinction highlights the versatility and centrality of campi in shaping the multifaceted urban life of the city.

VENETIAN ISLANDS: A UNIFIED WHOLE WITH SYSTEMIC CONNECTIONS

Despite the existence of numerous focal points, the islands of Venice maintain an essential unity with repetitive elements in their urban structure that systematically link one nucleus to the next. In the provided illustration, San Barnaba and S. Margherita, situated on different islets, are intricately connected through minor bridges (three visible in the map) and the internal logic of calli. This logic leads from public squares to semi-private calli, further into semi-public and public streets and bridges, ultimately reaching the subsequent nodal point or square. The handout serves as a significant example of Venice's urban texture, showcasing a partial pinwheel arrangement within the Campo San Barnaba (Fig. 2.12). A comparison between Campo San Barnaba and Campo St. Polo and the quadrant layout study of Venice Hospital reveals analogous spatial configurations and logical arrangements within the squares.

PUBLIC HOUSING

CIRCULATION

WATER TRANSPORTATION

VENETIAN URBAN CIRCULATION: COMPLEXITY AND EFFICIENCY

The above study meticulously captures the intricacy and efficiency of the movement systems within the urban configuration of Venice. It emphasizes the significance of the matrix formed by the interaction of campielli and calli, creating central nuclei with multiple radiating paths, often originating from its four corners. This composition is asymmetrical, enabling rotation on its axis and systematic connection to the next islet until reaching the peripheral point. From there, it reconnects to a subsequent inner isle and retreats toward the center.

A diagrammatic representation illustrating some of the routes generated by these squares reveals an intriguing similarity between this 17th-century map outlining present Venetian pedestrian routes and modern city public transportation maps. However, the Venetian example remains much more complex, dynamic, and multi-dimensional in its renderings and functionality.

It can be argued that the discussed circulation system serves as the primary component of the urban physiology and configuration of the Venetian city fabric. These systems act as propelling elements that define and generate the structural and architectural elements of the city's built areas, as further analyzed below in their hierarchical order.

VENETIAN MOVEMENT SYSTEMS: LIMITED VEHICULAR ROUTES AND INTEGRATED EFFICIENCY"

Unlike other movement systems in the city, vehicular routes in Venice are notably limited, primarily concentrated towards the northern edge, enclosed by large public garages referred to by Le Corbusier as 'blind alleys.' Despite their restricted existence, the vehicular system operates independently, efficiently fulfilling its role without significant interference from other movement systems.

A diagrammatic representation of the circulation systems within the San Barnaba area, including a hypothetical vehicular/railway system towards the northwestern periphery, illustrates that within the campo's minuscule area, outlined as a partial pinwheel system, all main modes of circulation systems coexist with equal hierarchical significance.

When compared to the proposed hospital project's Level 3, along with Levels 2a and 2b, it becomes apparent that Le Corbusier endeavored to incorporate similar design and programmatic elements within different levels of his project.

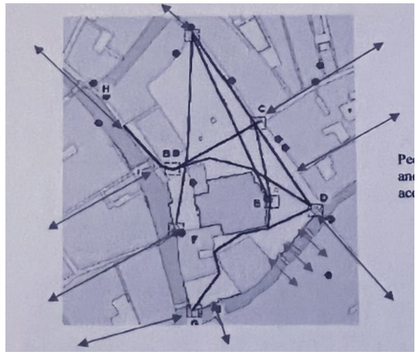
INTEGRATED CIRCULATION SYSTEMS IN VENETIAN URBAN DESIGN AND LE CORBUSIER'S PROJECT

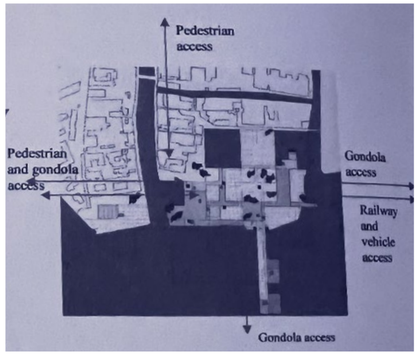
In stark contrast to other movement systems in Venice, vehicular routes are severely limited, primarily confined to the northern edge with large public garages, aptly named 'blind alleys' by Le Corbusier. Despite their constrained presence, the vehicular system operates independently with remarkable efficiency, functioning without significant interference from other movement systems.

A diagrammatic representation of circulation systems within the San Barnaba area, including a hypothetical vehicular/railway system towards the northwestern periphery, reveals that within the campo's minuscule area—a partial pinwheel system—all major modes of circulation systems coexist with equal hierarchical significance.

Comparing this diagram to Level 3, along with Levels 2a and 2b of the proposed hospital project, showcases Le Corbusier's attempt to incorporate analogous design and programmatic elements across different levels of his project.

Despite the existence of numerous focal points, the islands of Venice maintain an essential unity with repetitive elements in their urban structure that systematically link one nucleus to the next. In the provided illustration, San Barnaba and S. Margherita, situated on different islets, are intricately connected through minor bridges (three visible in the map) and the internal logic of calli.





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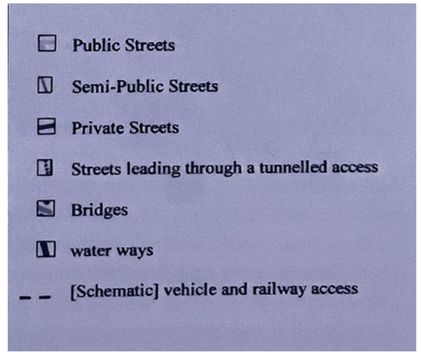

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VENICE HOSPITAL PROJECT: LE CORBUSIER'S EVOLVING MEMORIES OF A CITY

This interpretation posits that Le Corbusier's understanding of the city of Venice was a construction over time. The Venice hospital project, therefore, can be seen as a collection of Le Corbusier's memories and impressions of Venice. From his initial visit in 1907 to his 1934 lecture on the city and through to 1965, the architect continually reinforced and evolved his perception, manifesting in the design and development of the hospital project.

LE CORBUSIER'S PRAGMATIC VISION: INTEGRATING GEOMETRIC ABSOLUTES WITHIN URBAN CONFINES

Le Corbusier, in his pragmatic approach to the hospital project, maintained a 'geometric absolute' that remained harmoniously within the urban configuration of the site. As he expressed, "I projected a hospital complex that can spread like an open hand: a building without façade in which one enters from underneath..." This observation framed Le Corbusier's architectural operations, addressing both architectural and urbanistic concerns. In doing so, he actively contributed to the longstanding discourse on planning within Venice, rekindling a century-old debate on effective approaches to town-planning.

HARMONY IN HIERARCHY: CIRCULATION SYSTEMS AND URBAN DYNAMICS IN LE CORBUSIER'S VISION

Le Corbusier's nuanced understanding of Venice's urban dynamics is evident in his consideration of vehicular routes as "blind alleys," constrained to the northern edge. Despite their limited presence, the vehicular system operates independently and efficiently, paralleling other movement systems in metaphorical significance. A diagrammatic comparison of circulation systems in San Barnaba to the proposed hospital project's Levels 2a, 2b, and 3 reveals Le Corbusier's endeavor to integrate similar design and programmatic elements across different project levels, underscoring the harmony in hierarchical significance within the urban fabric.

VENICE'S UNIQUE URBAN MATRIX: A CRITICAL OVERVIEW

The city of Venice distinguishes itself from other medieval cities through its unconventional urban fabric. Notably, it lacks the typical spindle-shaped square or street formations found in other cities of its time. This distinct matrix-like layout is attributed to the city's foundation on shallow saltwater marshes and sand bars, stabilized by wooden beams that acted as a foundation for subsequent construction.

1. Source I (Translation by author)

Venice's multifold structure is characterized by autonomous islets, each centered around a church, marketplace, ruling family palaces, and residential quarters. Despite its autonomy, each islet is intricately connected through a complex network of side streets, bridges, and canals, contributing to the city's uniqueness.

Le Corbusier recognized the efficiency of Venice's pedestrian and canal networks, interpreting them as a form of schematic pinwheel system configuration. While this partial pinwheel system helps explain the logic of side street configuration, it is not the sole factor driving Venice's dynamic movement. The intricate network is exemplified in Campo Santa Maria Formosa, with numerous pedestrian routes, bridges connecting to private palaces, and links to subsequent islets, showcasing the city's vibrant and interconnected urban dynamics.

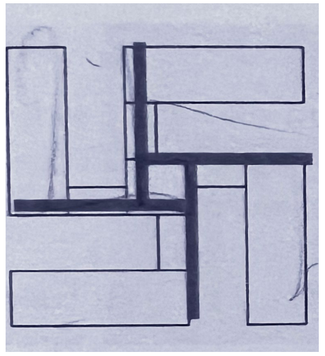
COMPARATIVE ANALYSIS: CAMPO SANTA MARIA FORMOSA AND VENICE'S URBAN DYNAMICS

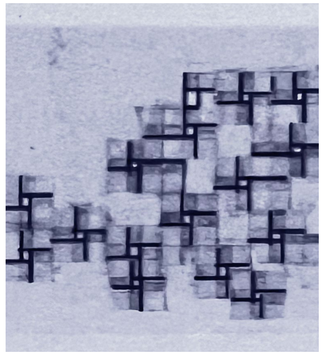
The diagrammatic representation of Campo Santa Maria Formosa, in comparison with Dickinson's categorization of medieval public squares, reveals a striking resemblance to the Square Marketplace in a Grid pattern. This compositional similarity is reflected in the multiple access points on the hospital project site's first level, showcasing comparable mechanisms of pedestrian and water route access. Furthermore, the ground-level route access of the hospital project aligns with the Square Marketplace in a grid pattern.

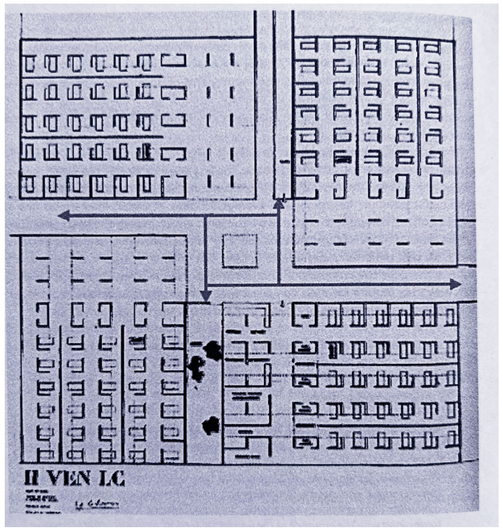
While Dickinson's Illustration 4 can be broadly interpreted as an abstraction of the pinwheel system, it is acknowledged as a single factor among various crucial urban elements contributing to the dynamic flux-like movement observed in Venice. The parallel usage and hierarchy of canals, ri, and internal streets, along with upper-level private passages connecting residential quarters, introduce multiple layers and added complexity to Venice's movement system. This intricate interplay of elements highlights the diverse factors influencing the city's vibrant urban dynamics.

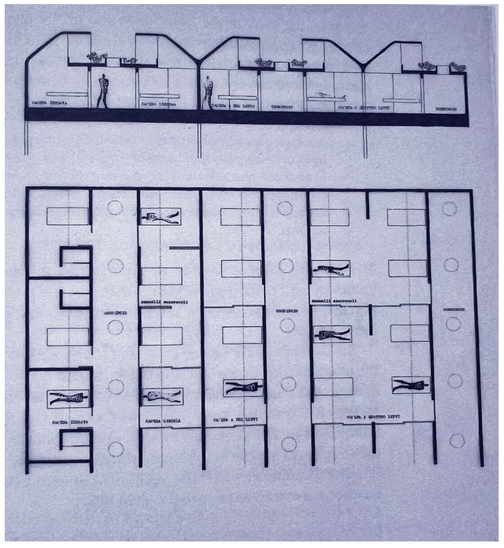
ARCHITECTURAL MEMORY

This analysis suggests that Le Corbusier's interpretation of the city of Venice evolved over time, culminating in the Venice hospital project as a manifestation of his enduring memories. From his initial visit in 1907 to his 1934 lecture on the city and until his passing in 1965, Le Corbusier continually reinforced his impressions of Venice. The Venice hospital project, therefore, can be seen as a dynamic reflection of the architect's evolving understanding and recollections of the city.









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A HORIZONTAL SHIFT: LE CORBUSIER'S INNOVATIVE DESIGN FOR THE VENICE HOSPITAL PROJECT

Le Corbusier's Venice hospital project marks a departure from traditional vertical hospital constructions, presenting a groundbreaking horizontal design. With a height of approximately 13.66 meters, mirroring the average height of Venetian buildings, the hospital is characterized by three principal levels. The first and second levels, each 5 meters in height, occasionally split into two stages of 2.26 meters. The third level, standing at 3.66 meters, is, in some areas, reduced to 2.26 meters. This innovative approach reflects Le Corbusier's commitment to integrating the hospital seamlessly into the architectural context of Venice.

ORGANIZATION AND FEATURES OF CARE UNITS

Care units for 28 patients function as independent entities, establishing an optimal balance among the total number of care units. Each care unit is divided into two zones—one housing the 'unité lit' and the other designated for nursing and prolonged confinements. Among the 28 'unité lits,' four units are larger, equipped with amenities such as a bathroom and a bed, resembling a sleeping-car berth for the caregiver. These care units are strategically clustered around a 'pinwheel' shape circulation system, as noted in Figure 1.19 above.

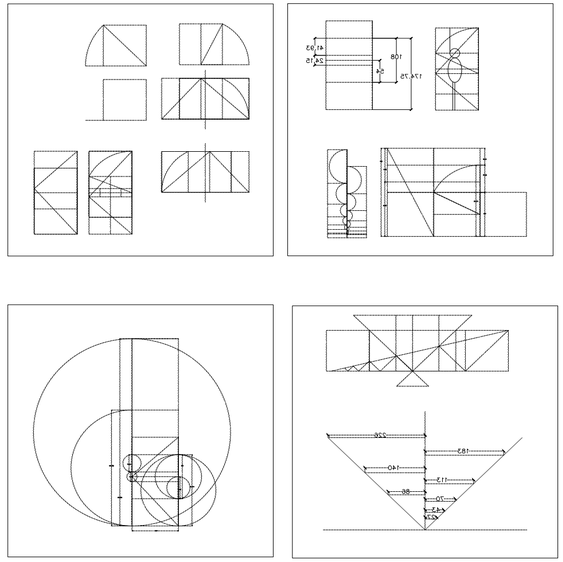
LE CORBUSIER'S GEOMETRIC VISION AND URBAN INTEGRATION IN THE HOSPITAL PROJECT

In formulating his practical approach to the hospital project, Le Corbusier underscored a 'geometric absolute' designed to seamlessly integrate with the urban layout of the site. He expressed this concept, stating, "I projected a hospital complex that can spread like an open hand: a building without a façade in which one enters from underneath." This unique perspective enabled Le Corbusier to operate on an architectural level while actively addressing urbanism issues. His contribution significantly contributed to the ongoing discourse surrounding planning within the city of Venice, rekindling a historical debate that had endured for over a century in the realm of town-planning approaches. Additionally, Corbusier adhered to a fixed height of 13 meters for the hospital, employing a modular system to determine proportional relationships within the project.

1. Source I (Translation by author)

RELATIONSHIP TO THE SITE: URBAN FABRIC AND MODULAR DESIGN

In the preceding chapter, the distinct urban fabric of Venice was explored, highlighting its unique features compared to other medieval cities. A central characteristic identified was the presence and significance of Campielli, or squares, serving as pivotal elements in regulating movement systems, including calli, ri, and various bridges. Jullian emphasizes that the concept of developing a building akin to a small city originated and evolved in the Venice hospital project. Each module within the hospital was conceptualized as a district or independent unit. The fundamental unit of the hospital project was organized around a group of four modules arranged in a partial pinwheel configuration (Fig. 3.1). This specific form emerged as the foundational design element that informed the entire structure of the hospital project, establishing a reciprocal relationship with the medieval fabric of the city.

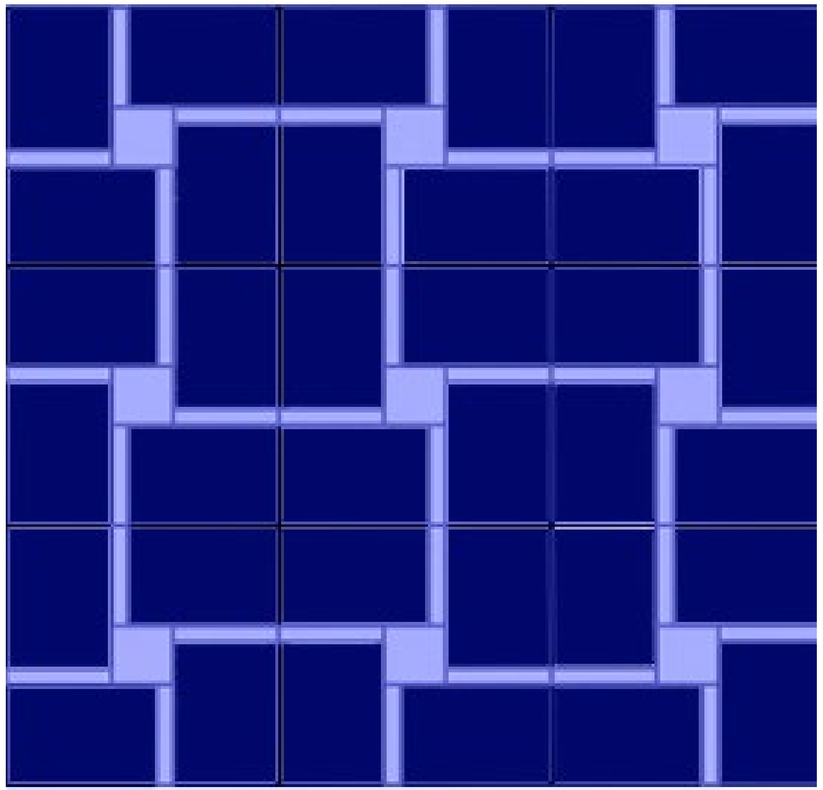


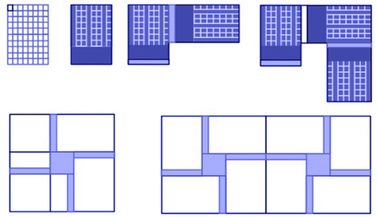
1. Source I (Translation by author)

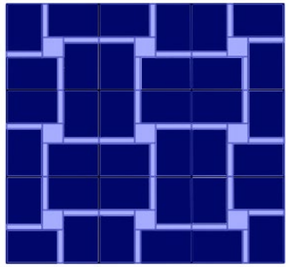
Chapter 2.5:

IMPORTANT FINDINGS

This chapter undertakes a comparative analysis between the principles of mat building and Le Corbusier's Venice Hospital project, highlighting their architectural resonance and urban organizational strategies. By exploring how mat building principles align with the essence of Venice's urban fabric, we uncover parallels in their spatial dynamics and design philosophies. This study navigates the intricate balance between the indifferent framework of mat building and the deliberate architectural interventions seen in the Venice Hospital, shedding light on their respective impacts on urban environments and architectural discourse.







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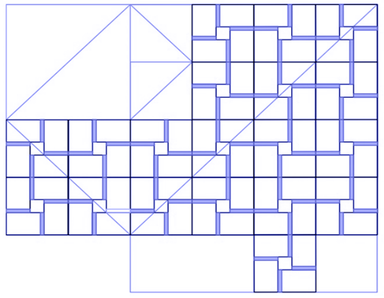

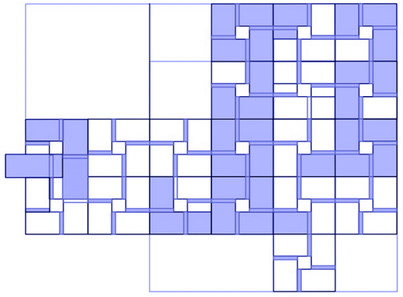

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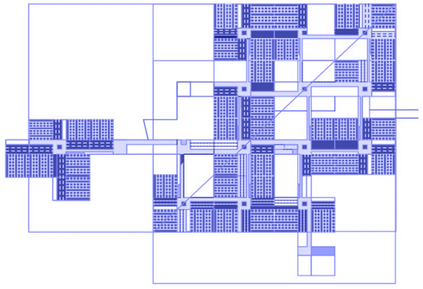

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MAT BUILDING PRINCIPLES AND VENICE HOSPITAL: A COMPARATIVE ANALYSIS:

In her influential essay "How to recognize and read Mat Building," Alison Smithson (1928-1993) contends that Mat buildings epitomize the anonymous collective. These structures, according to Smithson, allow functions to enrich the fabric, providing individuals with new-found freedom of action through a reorganized order based on interconnection, close-knit associations, and possibilities of growth, diminution, and change.

Smithson acknowledges the evolving nature of the Mat building typology, stating that it is challenging to provide a precise definition as it is "still developing." Instead, she suggests identifying a common set of ambitions rather than a strict family resemblance.

The Team 10 meeting in Abbaye Royaumont in 1962 served as a crucial platform for Smithson and other Team 10 members to refine the parameters of the Mat building typology. Projects discussed during the meeting included Aldo van Eyck's Amsterdam Municipal Orphanage (1955-1960), Piet Blom's Noah's Ark project for the urbanization of the Netherlands, and the Berlin Free University project by Woods.

Notably, Woods' project received commendation from Alison Smithson for its innovative design considerations. On the other hand, Blom's project faced outright rejection, denounced as "completely fascist" in its swastika-like patterning and its attempt to control all aspects of future growth.

A comparative analysis between the design approaches of Woods' Berlin Free University and Blom's Noah's Ark, juxtaposed with the Venice hospital project, brings to light the distinctions between the plan of the Venice hospital and the principles of Mat planning.

MAT BUILDING RESEMBLANCE AND URBAN ORGANIZATION:

The characteristics described above highlight the functional and social performance aspects of the design. However, a focus solely on functional factors fails to capture Le Corbusier's imaginative engagement with the city or the configurational analogy between the Hospital and Venice. The question arises whether the relationship between the Hospital and the urban fabric aligns with the Mat-building typology, which emulates the aggregate logic of organic generation.

1. Source I (Translation by author)

Figures like Smithson, Aldo van Eyck, and Candilis-Josic-Woods, proponents of Mat-building principles, might have influenced Le Corbusier and Guillermo Jullian de la Fuente. However, critics argue that the Hospital goes beyond a typical Mat-building instance. The project's significance lies in its 'poetic integration' into the essence of Venice. This essence was not discovered merely on the drawing board but through Le Corbusier's direct observation and interaction with the city over an extended period.

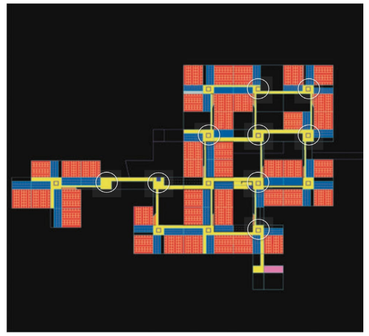
Le Corbusier himself claimed not to have invented anything; instead, the inspiration for the Hospital was derived from the logic of the terrain on which it was to be founded. Therefore, it is crucial to explore how the Hospital's design relates to the urban organization of this specific terrain.

A HOSPITAL ECHOING VENICE'S ESSENCE: NAVIGATING THE BALANCE OF FORCES

Venice stands apart from other cities due to its campi (squares) consistently revealing strategic positions in the urban fabric. These squares, opening to canals and connected by bridges, serve as crossroads where the visible and invisible structures converge. Venice's squares, uniquely consistent and recurrent, allow for the exposure of both tangible and intangible elements, offering a strategic role discernible through human intuition.

This ability to interface two networks within campi captivated Le Corbusier, influencing his imaginative incorporation of these elements into a new project—the hospital. Venice embodies a metaphorical and literal "lightness," seemingly floating on water. Waterfront campi, open on one side, meet functional demands, while structural considerations lead to delicate facades and buildings of pierced thickness. The city's architecture balances weight and lightness, creating a sensation of floating on water.

The architectural imagination is captivated by the interplay of forces that allow both weight and lightness to coexist on water. This interplay extends beyond the visual, enveloping the body as it moves across bridges, canals, steps, and hanging landings. Whether experienced by floating on a canal, walking on a bridge, or traversing dry land, the city enhances the perception of weightless gravity. The intersecting routes dematerialize the mass, blurring the lines between liquid and solid. The pleasure of multiple forking itineraries, combined in endless sequences—floating, elevated, or at ground level—further enriches the experience of Venice's architectural essence.



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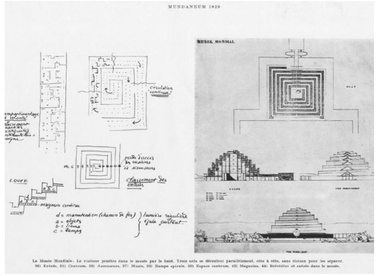

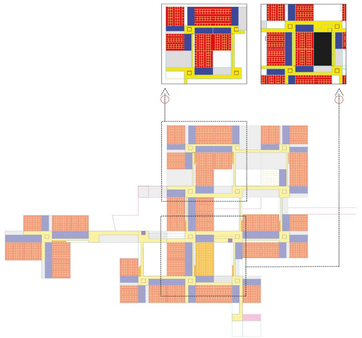

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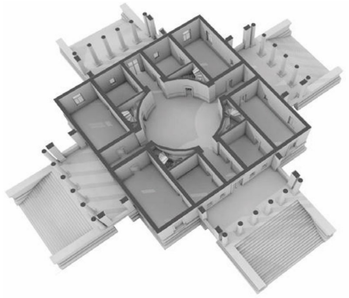

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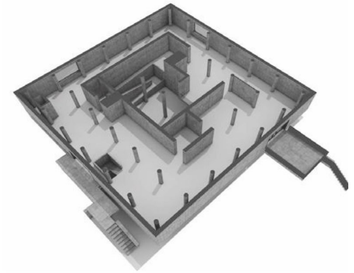


INDIFFERENCE: MAT VS. VENICE HOSPITAL

After Le Corbusier's death, his team faced the challenge of continuing the Venice Hospital project. A significant disagreement arose when Julian, a key figure in the team, rejected the concept of the Venice Hospital as a Mat building. He argued that Mat buildings were too simplistic and not complex enough for the Venice Hospital's scope.

First Difference: Systematic Indifference to Rooftop:
Julian emphasized the systematic indifference of the rooftop proposed by the Mat building concept. He sought to achieve this indifference in the Venice Hospital design. The hospital cells underwent meticulous studies through drawings and real mock-ups, drawing inspiration from Corbusier's 1925 Cité Universitaire. Julian continued this approach in projects like the 1967 BBC rooftop offices in Lyon and the 1967 Feria de Valencia.

Second Difference: Site Context Study and Integration with Venice: The Venice Hospital's context study was a key departure from traditional Mat building concepts. Julian considered the city's scale, the height of surrounding buildings, and the horizon of the lagoon. Respecting Venice's unique physiology, Le Corbusier stated, "if one cannot copy its skin, one must respect its physiology." The hospital became an extension of the city's buildings. Julian focused on integrating the hospital into the life of Venice, emphasizing poetry and a holistic understanding of the city's essence.

New Urban Fabric and Permeability:
Julian proposed a new urban fabric inspired by Venice, incorporating major public programs and amenities. He aimed for a structure permeable to the lake, rejecting traditional facades. His intention was to create an open and flexible program, emphasizing uncontrolled factors and the capacity of architecture to deal with the unpredictable.

Blurring Architectural Boundaries:
Julian's approach challenges a simplistic functional reading of the Venice Hospital. He argues that architecture goes beyond form and involves dealing with the unpredictable and unmeasurable aspects. The "+" sign in the authorship of the hospital ("Le Corbusier + Julian") symbolizes the collaboration, blurring the line between architect and disciple. Julian becomes the missing link, transforming the Venice Hospital into more than just another Mat building.

Eternal Return to Basic Problems:
The Venice Hospital, as a "temoin" (witness), encapsulates Le Corbusier's principles and theories, leaving the door open for what comes after. It represents not only a solution to a specific problem but also an opening, embodying a whole life and an eternal return to the "basic problems" that put everything back in order.

1. Source I (Translation by author)

GEOMETRY AND SPACE FROM PALLADIO TO LE CORBUSIER

While Le Corbusier did not explicitly reference networked flexible cities, it is conceivable that he may have been influenced by visionary designs of the early sixties. What sets the Hospital apart is Le Corbusier's departure from the superficial appearance of networks and Mats. Instead, he translated the invisible essence of Venice into a new and unique structure. Le Corbusier, drawing inspiration from classical architecture, seamlessly incorporated his mathematical explorations and proportional considerations into his buildings.

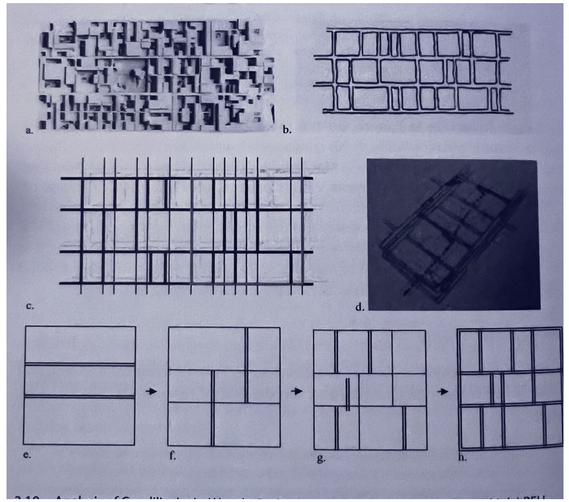
In particular, the pinwheel theme employed on the third floor of the Hospital, although distinctive to this project, is a recurring motif in Le Corbusier's broader body of work. This theme manifests a dual preoccupation: first, a classical centrality represented by the central square at the intersection of two geometric axes; and second, the intentional disruption of classical axes of symmetry and movement into four offset pathways, diverging from the center (See Figure 4.5). The pinwheel arrangement aligns conceptually with other prevalent motifs in Le Corbusier's projects, including regulating lines and the architectural promenade—an articulated circulation path winding through stairs, balconies, and ramps from the ground to the top level.

Le Corbusier envisioned the Hospital as an opportunity to respond to the unique context of Venice—an architectural legacy that blended humanism into ceremonial city spaces. The project became a dialogue between the defining context of Venice, a city marked by humanist architecture, and Le Corbusier's evolving architectural repertoire.

Historically, architects like Alberti and Palladio drew inspiration from Vitruvius, considering him the source of rules for correct arrangement and proportioning in architectural design. This intellectual heritage continued through scholars like Wittkower, Rowe, and Peter Eisenman, with Robin Evans emphasizing geometry as the medium through which buildings are conceived and visualized. Evans underscored the role of geometry in architectural drawing and thinking, highlighting its conscious use from the Renaissance onwards, when architects established architecture as a separate discipline through intensive studies of ancient architectural principles.

ANALYSIS OF CANDILIS, JOSIC, WOODS, BERLIN FREE UNIVERSITY PROJECT 1962-1964

The Berlin Free University (BFU) project, conceived by Candilis, Josic, and Woods in the early 1960s, underwent a phased construction, with only a quarter of the original scheme realized in the initial phase. The design, as illustrated in a sketch (b), featured a main design module derived from a rectilinear variant of a regular grid. An author's analysis (c) delves into the intricacies of the BFU design module, highlighting the connection of two squares to form a rectilinear grid. A circulation diagram (d) outlines the project's comprehensive approach, showcasing various multilevel and directional circulation elements within the complex. The sketch emphasizes the random pedestrian movement across open courts, represented by a dotted track, while direct movement between faculties is facilitated by travelators and escalators. Further insight is provided through the diagrammatic reconstruction (e-h) of individual design modules, accompanied by the author's analysis of the circulation system, depicted with double lines. This multifaceted analysis offers a nuanced understanding of the BFU project's design and circulation principles.



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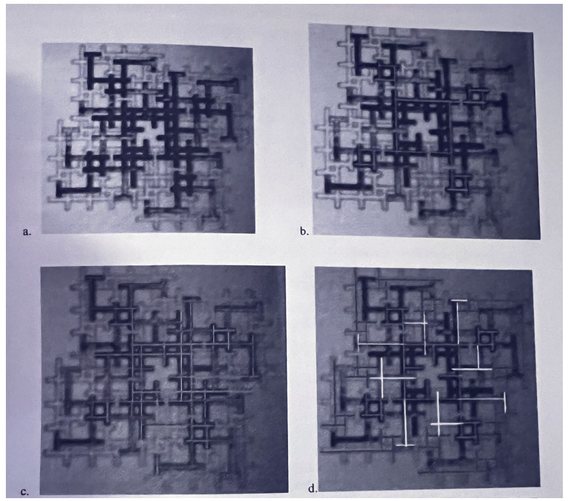
ANALYSIS OF PIET BLOM'S NOAH'S ARK PROJECT (1962): UNRAVELING THE PINWHEEL SYSTEM

The comprehensive examination of Piet Blom's Noah's Ark project, designed for the urbanization of the Netherlands, involves a detailed diagrammatic analysis. This scrutiny reveals the core design configuration, emphasizing the pinwheel system. Each figure in the analysis plays a crucial role: (b) visually illustrates the centralized pinwheel configuration; (c) elucidates the incorporation of four additional pinwheel configurations, skillfully overlapping with the central arrangement; (d) demonstrates the rotational movement of each supplementary pinwheel, resulting in the creation of three more configurations. The culminating visual representation in figures (e-f) unveils the resultant pinwheel systems seamlessly integrated within an intricately interconnected grid. This analysis unveils the ingenious design elements and the sophisticated intricacies inherent in Blom's groundbreaking Noah's Ark project.



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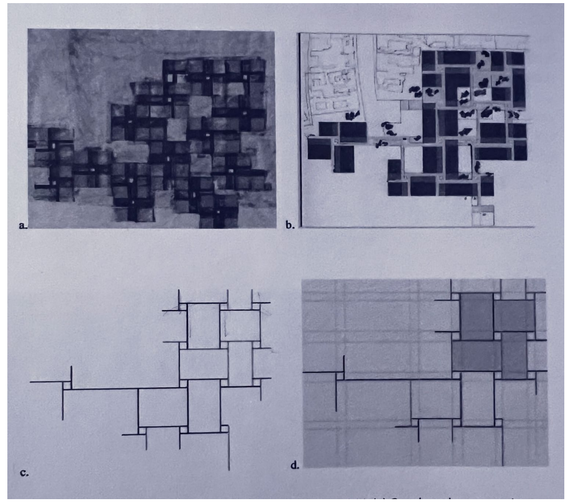
ANALYZING LE CORBUSIER'S VENICE HOSPITAL PROJECT (1964): A DEEPER LOOK INTO DESIGN MODULES

Exploring Le Corbusier's Venice hospital project of 1964 involves a meticulous analysis of its layout and design elements. The quadrant layout study, depicted in figure (a), showcases the aggregation of plans in a carefully planned scheme. Moving to figure (b), we delve into Project One of the Venice hospital, specifically Level 3, offering insights into the architectural composition. Figure (c) provides a diagrammatic reconstruction of Level 3, highlighting the partial pinwheel system as the central design module. This pinwheel system intricately weaves a pattern that is further organized into four parts, strategically utilized for hanging gardens, open courtyards, and patient accommodations, as depicted in figure (b). Lastly, figure (d) illustrates the partial pinwheel system embedded within a loose grid, emphasizing its role in regulating the building's structure while allowing for unrestricted growth. This analysis unveils the thoughtful design principles employed by Le Corbusier in shaping the Venice hospital project.



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EISENMAN'S VENICE INTERVENTION (1978):

In a pivotal moment in his career post-Houses, Peter Eisenman embarked on a distinctive project in Cannaregio in 1978. Unlike the detached architectural objects of his previous work, this endeavor, part of the "10 immagini per Venezia" workshop, took an indexical approach to Venice's urban history. Le Corbusier's unrealized Hospital provided the grid, while existing context was approached with indifference, seen as an unchangeable limit. Referencing past experiences, particularly House XI, Eisenman created a palimpsest devoid of chronological constraints. The intentional tenuous link between Venice and the new project led Eisenman to view it as too strong to represent accurately, opting instead to create a new text. Engaging in 'projective archaeology,' he left dynamic traces in Cannaregio, responding innovatively to Venice's complex urban fabric.

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Chapter 3:

URBAN STUDY 2 | JAWAHAR KALA KENDRA

Charles Mark Correa

(1 Sep 1930 – 16 June 2015)

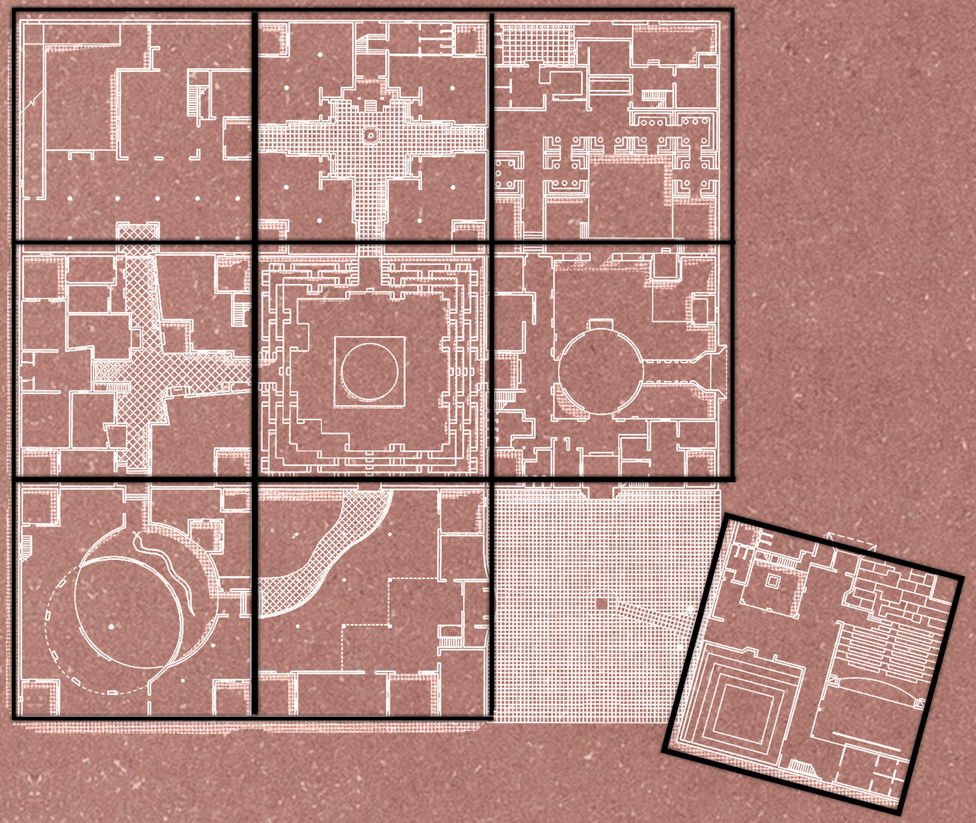
Education - Massachusetts Institute of Technology
University of Michigan

Project in Jaipur = Jawahar kala kendra

Charles Mark Correa, born on September 1, 1930, in Secunderabad, India, is a renowned architect known for his innovative designs and contributions to urban planning. Married to Monika Sequeira in 1961, Correa is a father of two children, Chinu and Nakul, and currently resides in Bombay, India.

Correa's educational journey began with an Inter-Science degree from St. Xavier's College, University of Bombay, from 1946 to 1948. He pursued his Bachelor of Architecture degree from the University of Michigan from 1949 to 1953, followed by a Master of Architecture from the Massachusetts Institute of Technology from 1953 to 1955.

His professional career spans over six decades, starting with private practice in 1958. Notable highlights include his collaboration with Pravina Mehta and Shirish Patel in proposing an alternate Master Plan for a twin city across the harbor from Bombay in 1964-1965. In 1969-1971, he was invited by the Government of Peru and the United Nations, among other international architects, to design a low-cost housing project in Lima. From 1971 to 1974, he served as the Chief Architect to CIDCO, contributing to the design and development of New Bombay. Additionally, he served as a consultant to the U.N. Secretary-General for HABITAT from 1975 to 1976, and was a member of Barbara Ward's "Vancouver Symposium" at the United Nations Conference on Human Settlements in Vancouver, Canada, in June.



Chapter 3.1:

WHY JAIPUR?

In this chapter, we explore the rich historical and urban evolution of Jaipur, a city founded in 1727 CE by Sawai Jai Singh II. Designed meticulously according to the principles of "Shilpa Shastra", Jaipur stands as a prime example of planned urban development in northern India. We delve into Jaipur's structured layout, characterized by broad, intersecting streets that reflect its original vision as a commercial and administrative hub. Amidst regional turmoil in the 18th century, Jaipur flourished as a center of trade, particularly in jewelry and banking, and expanded to encompass various local craft industries. Despite its initial confinement within city walls, Jaipur underwent significant expansion in the mid-20th century, culminating in its designation as the capital of Rajasthan following India's independence in 1949. Today, Jaipur's architectural and cultural heritage, including two UNESCO World Heritage Sites, underscores its status as a UNESCO Creative City of Crafts and Folk Art, positioning it prominently on the global stage as a candidate for World Heritage City status since 2018.

Text source to be mentioned: (filler text)

THE MAKING OF THE PINK CITY

The history of the Jaipur Kingdom dates back to 1150 CE, but the present walled city was only planned as the new capital in 1727 CE by ruler Sawai Jai Singh II. He envisioned it as a commercial hub and business center, leading to its distinctive character. With an area of 6.7 sq. km, Jaipur stands out as one of northern India's first planned cities, following the principles of "Shilpa Shastra". Its structured layout, characterized by broad streets intersecting at right angles and designated areas for various purposes, has attracted academic interest.

During the 18th century, while northern India faced turmoil from invasions, Jaipur flourished as a haven for traders, particularly moneylenders and jewelers from neighboring cities like Delhi and Agra. This led to the city becoming a hub for the jewelry industry and banking, gradually expanding its reach into other local craft industries and emerging as a leading exporter of textiles, wooden furniture, gems, jewelry, leather goods, and handicrafts. Even today, more than half of the city's commercial activity is concentrated within its walled area.

Although the city began to expand beyond its walls in the late 18th century, the majority of the population remained within the city walls until the early 19th century. The expansion gained momentum in the 1940s, with town planner Sir Mirza Ismail envisioning a unified urban landscape for the native states of Rajasthan. After independence in 1949, Jaipur was declared the capital of the new state, becoming a multifunctional hub for administration, commerce, education, healthcare, IT, and tourism.

Today, Jaipur boasts two UNESCO World Heritage Sites and has recently been recognized as the "UNESCO Creative City of Crafts and Folk Art", positioning it as a contender for World Heritage City status since 2018.

JAIPUR: A GROWING METROPOLIS IN RAJASTHAN

Jaipur, the capital and largest city of Rajasthan, boasts a population of 3.1 million as per the Census of India, 2011, making it the 10th most populous city in India. This population is steadily increasing at an average rate of 3% per year, as reported by the World Population Review, 2017. Projections suggest that by the year 2025, the population will soar to 6.5 million, marking Jaipur as a burgeoning metropolitan area in the making (JDA, 2011).

The urban expansion of Jaipur is evident, with 6,471 hectares of built-up area added to its extent between 2000 and 2014, as documented in the Atlas of Urban Expansion. Administratively, Jaipur District is divided into 16 Tehsils, further segmented into 2,180 villages constituting 15 Panchayat Samitis and 532 Gram Panchayats, alongside 10 Nagar Palikas and 1 Nagar Nigam (Municipal Corporation).

Text source to be mentioned: (filler text)

JAIPUR CITY

While Panchayat Samitis and Gram Panchayats oversee rural administration, Nagar Nigam and Nagar Palikas govern urban areas (Jawaid, Sharma, Pipralia, & Kumar, 2017).

Tourism plays a pivotal role in Jaipur's economy, attracting nearly 2.5 million visitors annually (JDA, 2011). Situated as part of the 'Golden Triangle' alongside Delhi and Agra, Jaipur enjoys excellent connectivity via rail, road, and air, contributing to its status as a preferred destination. Moreover, with an annual tourism growth rate of approximately 18%, the city's allure continues to expand (JDA, 2011). Presently, the economy relies heavily on tourism and cultural industries, with approximately 32% of Jaipur's population residing and working within the walled city.

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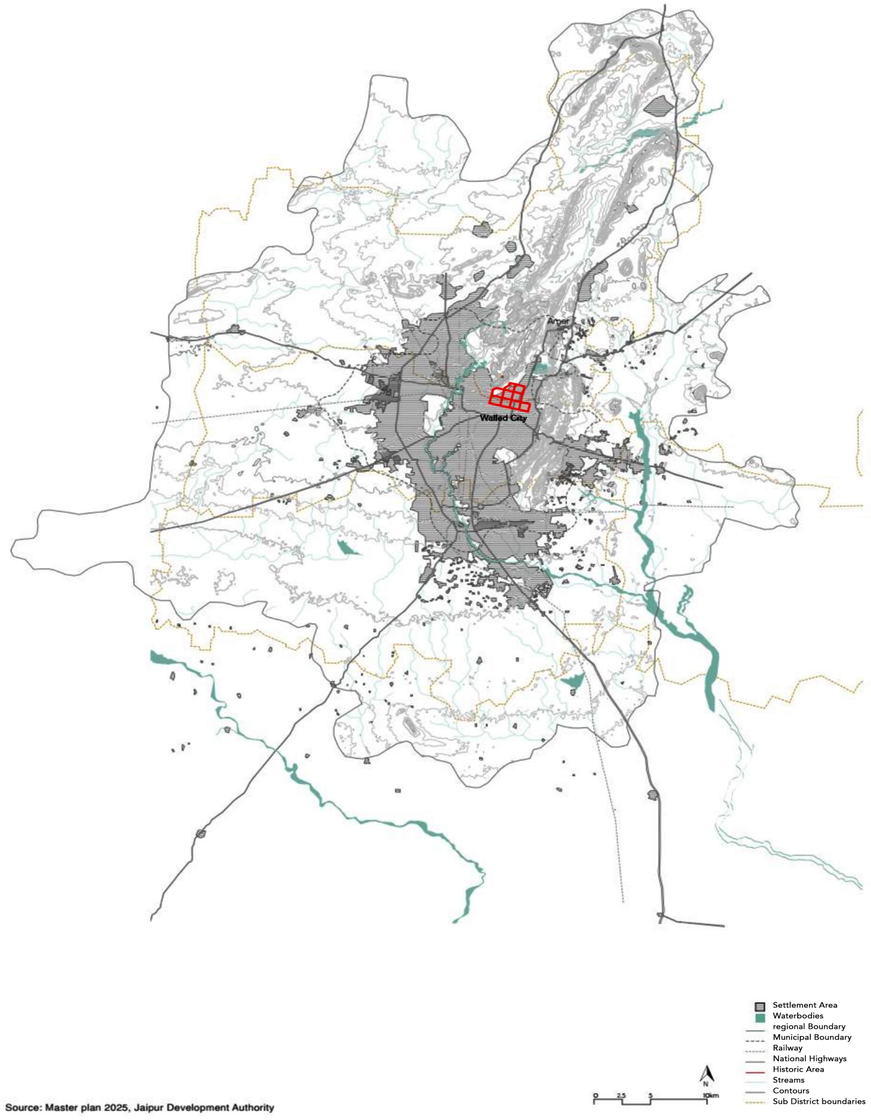


Source: Master plan 2025, Jaipur Development Authority

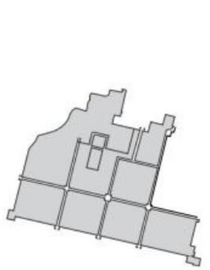
GEOGRAPHICAL FEATURES AND CLIMATE OF JAIPUR

Jaipur is situated between 26°23'N to 27°51'N latitudes and 74°55'E to 76°50' E longitudes, covering an area of 11,151 sq. km, which accounts for nearly 3.3% of the State (JDA Master plan 2025). Located in the eastern part of Rajasthan, the region experiences semi-arid conditions and is bordered by the Jhalana Hills in the east and Nahargarh Hills in the north, both part of the Aravali belt. The city also features isolated peaks in the south and west, with elevations ranging from 500-800m. To the south, the terrain is flat and extends well beyond the town of Sanganer.

Originally, the walled city was situated on the rocky side of the northeast, allowing for efficient drainage systems on either side. However, urban expansion towards the south and west has transitioned into alluvial plains, with the Amanisha Nala in the west and Jhalana Nagar Nala in the east.

The city's general slope runs from north to south, then towards the southeast. While the peaks of Nahargarh reach 580m, the southern levels descend to 280m towards the Dhundh river.

Jaipur falls within the hot and dry climate zone, experiencing scorching summers with the highest monthly mean temperature of 40.3 °C from April to June, and mild winters during December and January, with a monthly mean temperature of 7.8 °C. Rainfall is relatively low, although the eastern part of the region receives more precipitation compared to the western part of the state. Annual rainfall ranges from 823.2mm to 540.6mm. The district is drained by several rivers such as the Banganga, Banas, Sabi, and Shekhawati, along with streams like Bandi, Mashi, Dhund, Morel, Mendha, Gumti ka Nala, and Madhobini (Hydro-geological Atlas of Rajasthan - Jaipur District, 2013).



	I JAIPUR REGION I	I JAIPUR CITY I	I WALLED CITY I
Area	11,143 sq km Urban: 489.5 sq km [4.39%] Rural: 10,653 [95.6%]	484.5 sq km 4.34 % of Region	6.7 sq km 1.38 % of City
Adminnistrative Division	13 Sub Districts, 19 Towns, 2180 Villages Jaipur Development Authority	77 Wards Jaipur Municipal Corporation	14 Wards of the City Jaipur Municipal Corporation
Total Population	6.6 Million Urban: 3.4 Million [52.4%] Rural: 3.1 Million [47.6%]	3.04 Million	0.28 Million
Population Density	595 person/ sq km	6593 persons/ sq km	42164 persons/ sq km
Households	1,145,904	381,176 33.2 % of Region	64,800 17 % of City

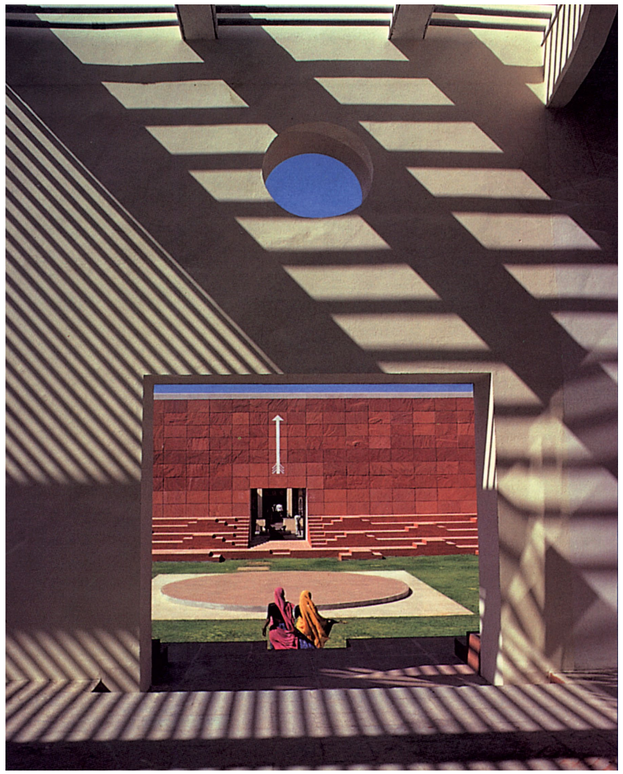
Source: Masterplan 2025, JDA

Text source to be mentioned: (filler text)

Chapter 3.2:

TECHNICAL REPORT

In this chapter, we explore the historic walled city of Jaipur in Rajasthan, India, meticulously planned according to Vastu Shastra principles. From its inception, Jaipur's design was imbued with intricate detailing and a focus on sustainability. Every facet of the city's layout and architecture contributed to a cohesive and forward-thinking vision, preserving its unique character and significance. This exploration reveals how Jaipur's planned design has shaped its enduring identity and continues to influence urban development practices today.



1. Before 1713, hypothesis regarding the position of pre-existing villages on the plain at the south of Amber

2. 713-1715, construction of the Jai Niwas, the observatory and the temples

3. 1718-1725, setting up the chowkri, the Palace and the bazaar axes

4. 1725-1734, setting up bazaars and chaupars with arrangement of shops

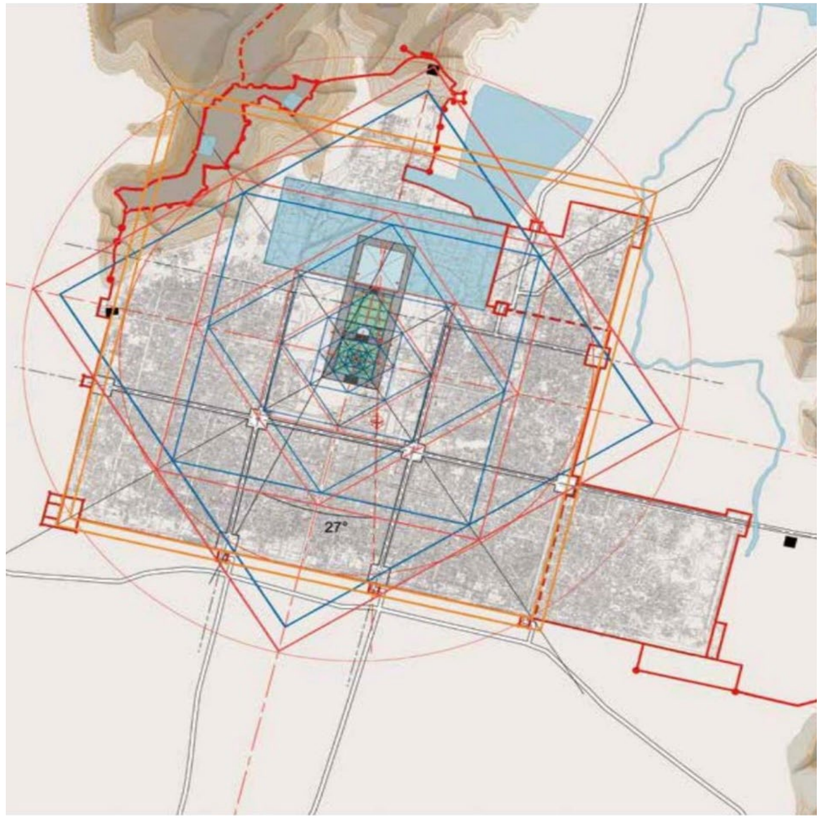
5. 1725-1743, construction of the rampart and forts

6. 1725-1743, catchment, conservation and distribution of water

7. 1725-1743, setting up the grid and urbanisation

8. 1743-1775, extension neighbourhoods

9. 1775-..., modern extension

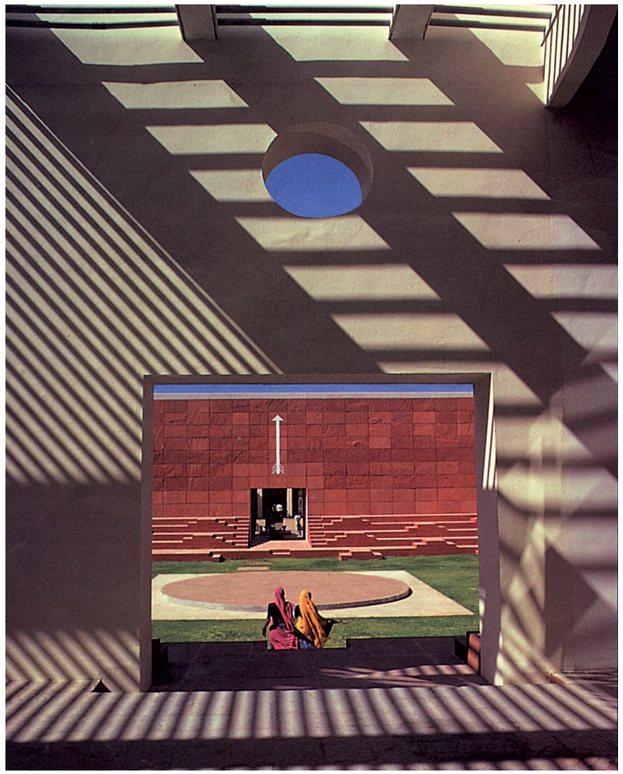


The historic walled city of Jaipur in Rajasthan, India, was meticulously planned according to Vastu Shastra principles, ensuring intricate detailing and sustainability from its inception. Every aspect of the city's design contributed to a cohesive and forward-thinking vision, preserving its unique character and significance, thus shaping the city's enduring identity.

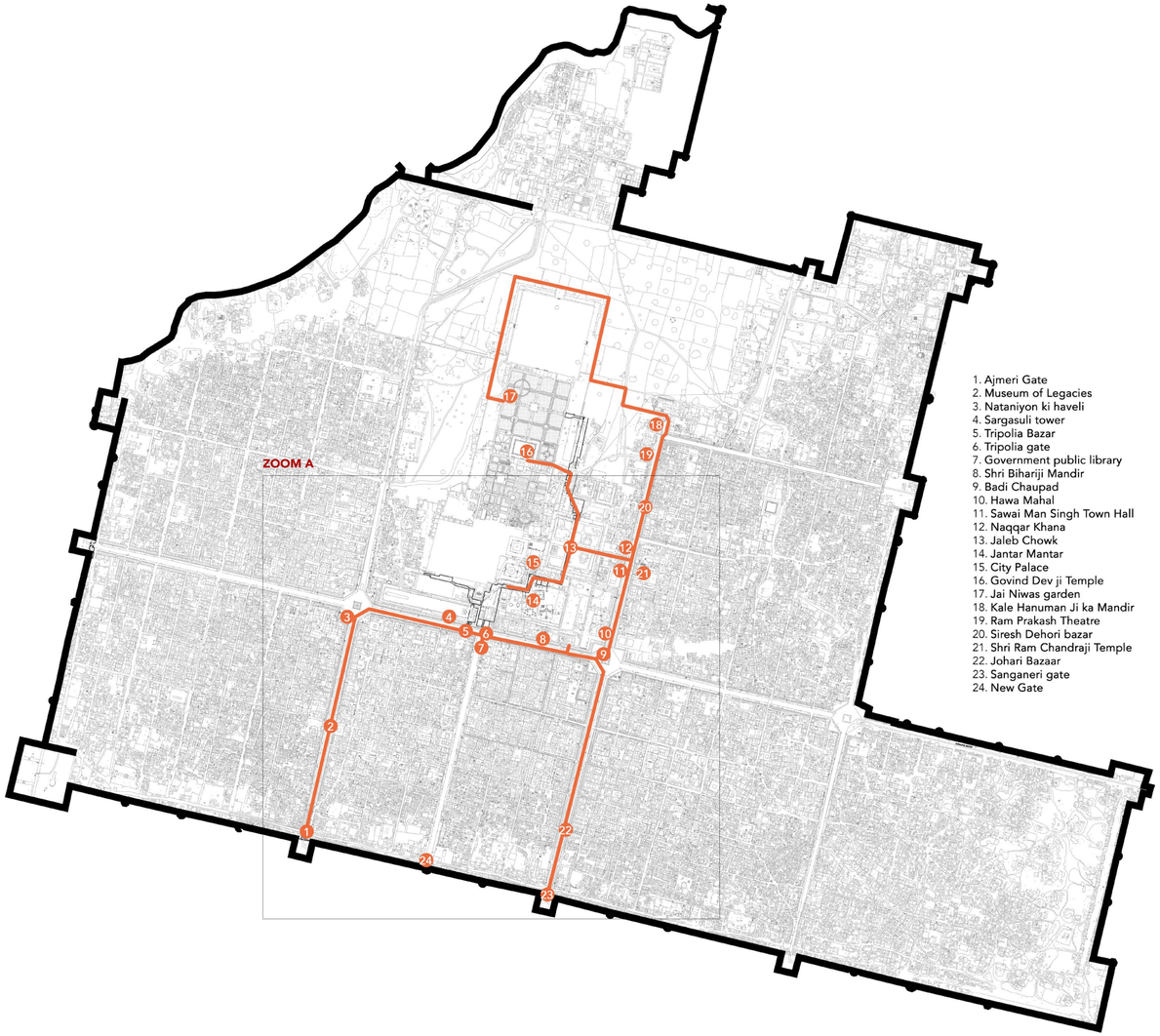
Chapter 3.3:

ASSEMBLING THE CITY

In this chapter, I embarked on a journey through the walled city of Jaipur, meticulously exploring its architectural elements and city planning. Drawing inspiration from this exploration, I applied principles similar to those used by Charles Correa in designing the Jawahar Kala Kendra, a cultural center in Jaipur. By studying the city's historical fabric and urban layout, I sought to integrate its essence into a new architectural project within Jaipur, aiming to harmonize tradition with contemporary design principles.

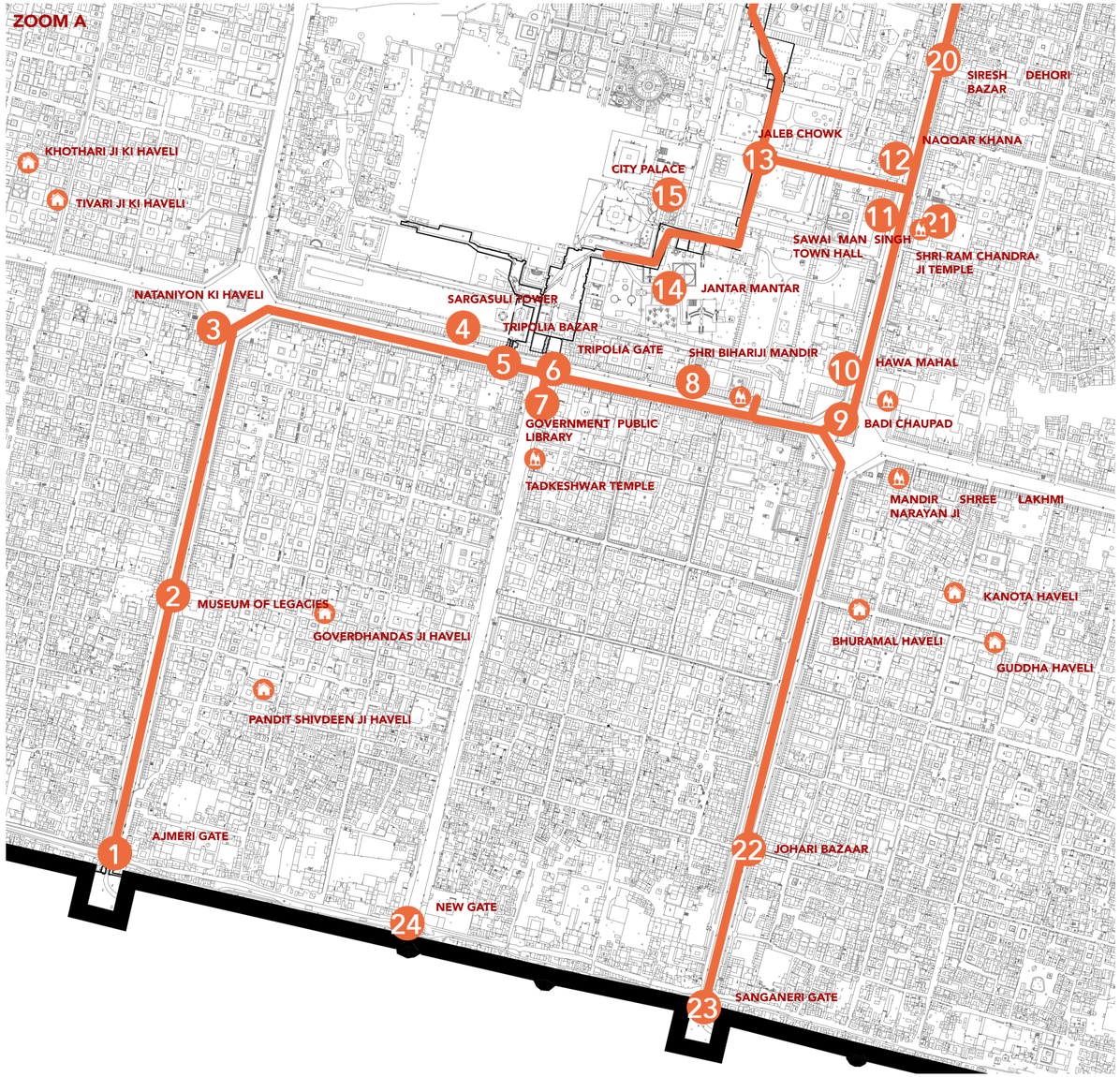


THE WALLED CITY



1. Ajmeri Gate
2. Museum of Legacies
3. Nataniyon ki haveli
4. Sargasuli tower
5. Tripolia Bazar
6. Tripolia gate
7. Government public library
8. Shri Bihariji Mandir
9. Badi Chaupad
10. Hawa Mahal
11. Sawai Man Singh Town Hall
12. Naqqar Khana
13. Jaleb Chowk
14. Jantar Mantar
15. City Palace
16. Govind Dev ji Temple
17. Jai Niwas garden
18. Kale Hanuman Ji ka Mandir
19. Ram Prakash Theatre
20. Siresh Dehori bazar
21. Shri Ram Chandraji Temple
22. Johari Bazaar
23. Sanganeri gate
24. New Gate

ZOOM A



The Ajmeri Gate

Museum of Legacies

Nataniyon Ki Haveli

1. THE AJMERI GATE: A HISTORIC ENTRYWAY TO JAIPUR'S WALLED CITY

The Ajmeri Gate stands proudly as one of the seven gates that grant access to Jaipur's walled city. Its strategic placement is matched only by its historical significance, deriving its name from the ancient route connecting Jaipur to the city of Ajmer. Recently renovated, the Ajmeri Gate maintains its public importance as a notable landmark, serving as a testament to Jaipur's rich heritage and enduring legacy.

2. MUSEUM OF LEGACIES (FORMERLYRAJASTHAN SCHOOL OF ART) - 1866

Despite undergoing several name changes and shifts in its purpose, from the original Madrasa-i-Hu-nari to the Maharaja School of Art, and most recently, its transformation into the elegantly conceptualized Museum of Legacies, this location holds significant historical importance. It symbolizes the initial endeavor to establish a modern art school dedicated to teaching traditional crafts within a formalized studio-workshop setting in Jaipur. As colonial influences began to permeate various aspects of indigenous life, progressive British officials and local elites became concerned about the potential loss of 'oriental' skills. Inspired by the successful establishment of art schools like the JJ School of Arts in Bombay during the mid-19th century, several princely states, including Baroda and Jaipur, followed suit. The architectural design of the building is characterized by simplicity: a square layout centered around a courtyard with various rooms surrounding it. The front elevation, featuring a prominent entrance gate or Pol, reflects this symmetrical simplicity.

3. NATANIYON KI HAVELI: A TESTAMENT TO WEALTH AND LEGACY IN JAIPUR

Nataniyon Ki Haveli, or the Mansion of the Natani Family, stands as a testament to the prominence of the Natani sub-group within the Khandelwal community of merchants and traders in Jaipur. Reflecting the wealth and influence of its patrons, this Haveli is renowned as one of the finest examples of its kind in the city. Havelis, traditional residential structures prevalent in the arid climates stretching from the Middle East to Northwest India, are characterized by their inward-oriented design, typically featuring one or several open-to-sky courtyards.

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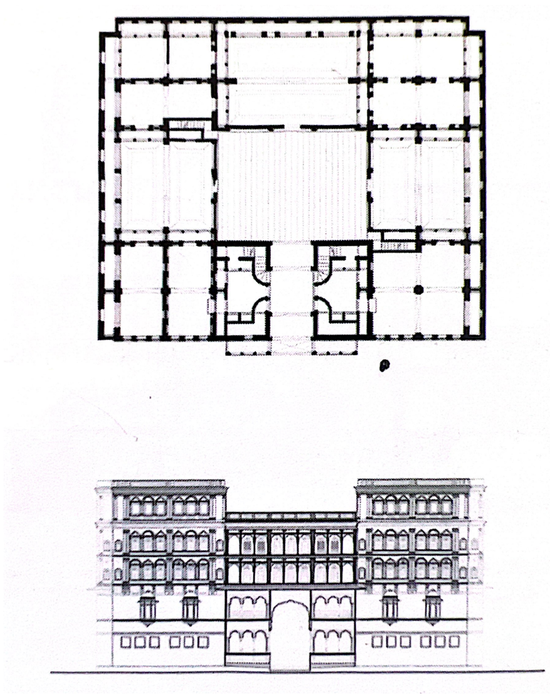
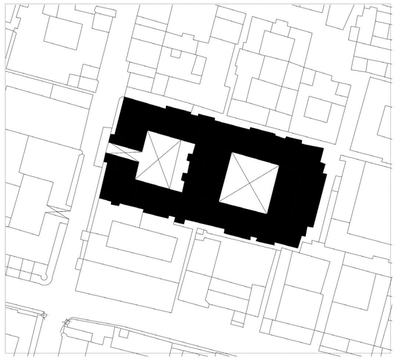


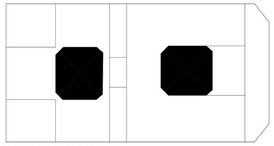
Elevation and Ground Floor plan

The layout of these buildings, including the number of courtyards, rooms, and their sizes, could vary depending on plot size and the sponsor's wealth. In the case of Nataniyon Ki Haveli, its grandeur is evident in its seven courtyards and a diverse array of rooms, showcasing its adaptability to various needs.

Over time, this Haveli underwent transformations, reflecting changing circumstances and demands. It was eventually acquired by the state, with parts of it converted into a significant police station and a government school. Recently, the Haveli has been designated as a 'protected monument' by state authorities, highlighting its historical and architectural significance.

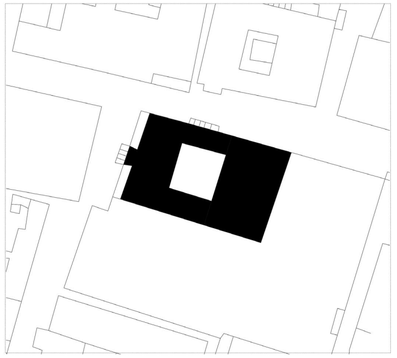
KANOTA HAVELI

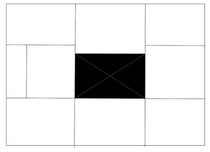




Double Courtyard Typology
Ground + 2 Floors
GF = Commercial
FF = Commercial
SF = Residential

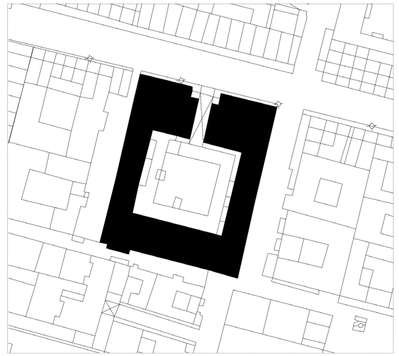
BAJJ HOUSE

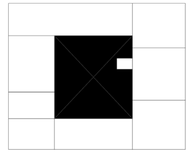




Single Courtyard Typology
Ground + 2 Floors
GF = Residential
FF = Residential
SF = Residential

BHURAMAL HAVELI





SingleCourtyard Typology
Ground + 2 Floors
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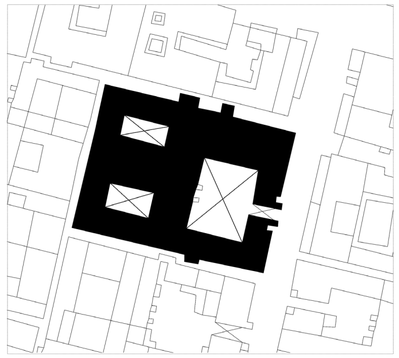
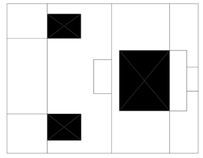
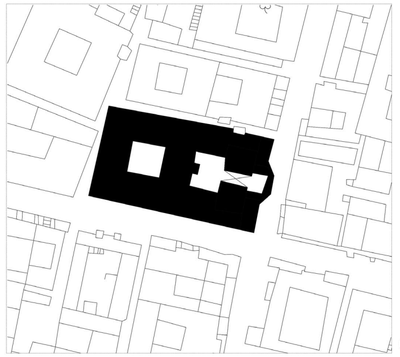
FF = Residential
SF = Residential





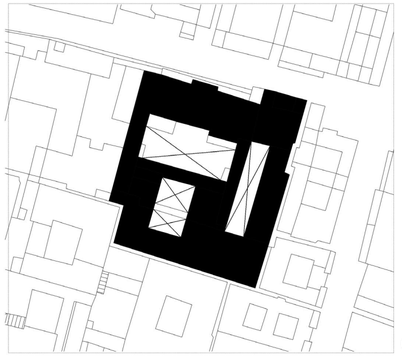
Multi Courtyard Typology
Ground + 2 Floors
GF = School
FF = School
SF = School

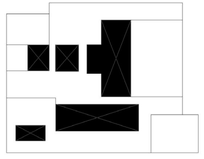
PANDIT SHIVDEEN JI HAVELI



Double Courtyard Typology
Ground + 2 Floors
GF = Residential
FF = Residential
SF = Residential

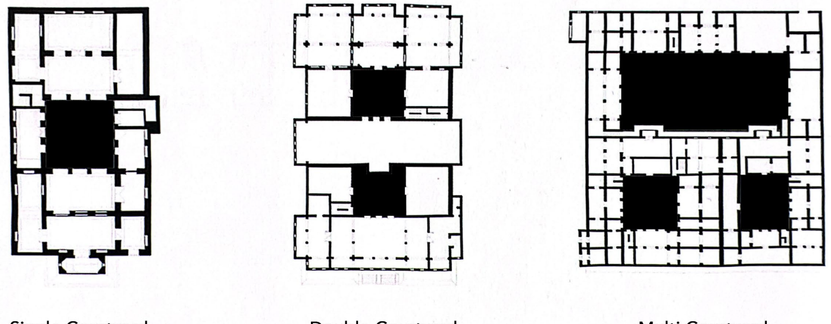
GUDDHA HAVELI





Multi Courtyard Typology
Ground + 2 Floors
GF = Residential
FF = Residential
SF = Residential

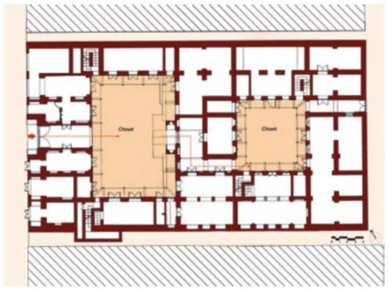
Different courtyard houses in jaipur



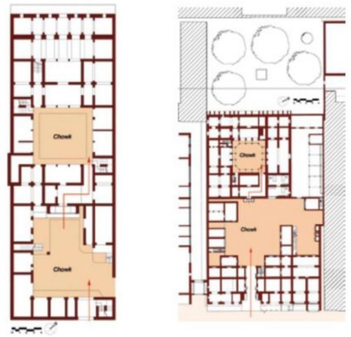
Single Courtyard

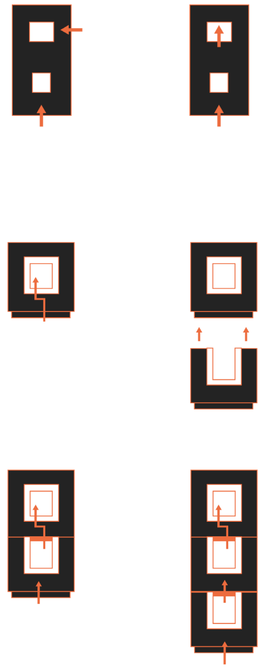
Double Courtyard

Multi Courtyard



11. Kashliwalji ki haveli (survey no. 24), plan of the ground floor





Theoretical table of houses with several courtyards (1. General courtyard houses: separate entrances, 2. Courtyard houses in Jaipur: successive courtyards,
3. One courtyard, 4. The successive forecourt system, 5. Two courtyards, 6. Three Courtyards

EXPLORING THE ESSENCE OF COURTYARD HOUSES IN JAIPUR

In Jaipur, residences are characterized by the quintessential "courtyard houses" architectural style. Within the densely packed urban landscape of Jaipur, homes typically span the entirety of their plot. Consequently, the courtyard emerges as a pivotal feature, serving as the primary source of airflow within the household and often the sole outdoor space on the ground. While a few havelis once boasted rear gardens, many have succumbed to abandonment, exemplified by structures like Tiwari ji ki haveli and Raja Udai Singh ji ki haveli.

Within the realm of "courtyard houses," the courtyard assumes paramount importance in spatial organization and domestic life. Unlike mere "houses with courtyards," where the courtyard functions primarily to illuminate and ventilate specific rooms, Jaipur's courtyard houses integrate the courtyard into the very fabric of daily existence. Here, the courtyard transcends its role as a mere space; it becomes a vital living area, utilized and inhabited to its fullest extent.

This distinction prompts a broader inquiry into the shared characteristics and disparities between Jaipur's courtyard houses and similar architectural styles worldwide, particularly those prevalent around the Mediterranean region. Understanding these nuances necessitates situating Jaipur's residences within the broader context of courtyard housing traditions.

Furthermore, this exploration occasionally delves into comparisons with other Indian domiciles, drawing insights from existing studies.

CHARACTERISTICS AND SPECIFICITIES OF COURTYARD HOUSES IN JAIPUR

To delineate the distinctive traits of this housing typology, we will construct a classification of architectural examples utilizing rational typological criteria. This approach will illuminate the unique facets of architectural culture and philosophy prevalent in Jaipur from the 18th to the 20th centuries. The criteria outlined below will be arranged in descending order of significance, progressing from overarching principles to finer details:

Spatial Organization:

Centralization of the courtyard as the focal point of domestic life.
Arrangement of rooms and living spaces around the courtyard for optimal functionality and accessibility.

Text source to be mentioned: (filler text)

Architectural Elements:

Integration of traditional features like jharokhas and chhatris.
Use of local materials such as sandstone and lime plaster.
Ventilation and Lighting:

Strategic placement of openings and windows for natural airflow and illumination.
Incorporation of elements to combat harsh climatic conditions.
Cultural Influences:

Integration of cultural symbols and motifs reflecting Jaipur's heritage.
Adherence to Vastu Shastra principles for spatial planning.
Socioeconomic Factors:

Design adaptation to accommodate different socioeconomic statuses.
Evolution of design in response to societal and economic changes.

EXPLORING COURTYARD ARRANGEMENTS IN JAIPUR'S TRADITIONAL HOUSES

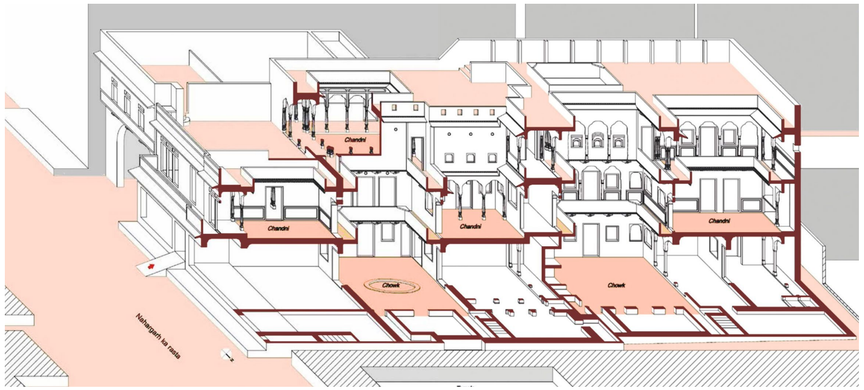
In Jaipur, houses are categorized based on the number of courtyards they possess. Typically, residences feature either one or two courtyards, occasionally extending to three, even within modest dwellings. A notable characteristic is the sequential arrangement of these courtyards, where each leads to the next, distinguishing Jaipur houses from other multi-courtyard dwellings.

In contrast to setups in other regions, such as Isfahan or Riyadh, where multiple courtyards often serve distinct purposes and have independent entrances, Jaipur's houses maintain a singular entrance. This design fosters a strong connection between the zenana (women's quarters) and mardana (men's activity areas).

Consider the Kashliwalji ki haveli as an example, a large two-courtyard residence. Upon entering through the front porch, one encounters a second facade akin to the first, creating a forecourt effect. Accessing the second courtyard involves navigating through a staggered passageway, leading to the heart of the house nestled within the zenana, away from the street.

Examining the haveli's blueprint confirms this layout. The rear part, centered around the primary courtyard, follows a square geometry, underscoring its significance. Conversely, the street-facing forecourt, partially enclosed and rectangular, lacks the corridors typical of inner areas, maintaining a street-like facade for protection.

PALIWAL HAVELI



Different courtyard houses in jaipur

Theoretical table of houses with several courtyards (1. General courtyard houses: separate entrances, 2. Courtyard houses in Jaipur: successive courtyards,
3. One courtyard, 4. The successive forecourt system, 5. Two courtyards, 6. Three Courtyards

CONSTRUCTION TECHNIQUES OF JAIPUR HAVELIS

The construction of Jaipur havelis involves a dual approach, combining a robust main framework with lighter appended structures.

The main framework comprises load-bearing masonry walls, typically constructed from sandstone, shale, or limestone, with a minimum thickness of 50 centimeters. These walls, coated in a smooth pink finish, exhibit a raw appearance due to the absence of molding. Often concealed by the lighter structures, they become visible towards the rear of buildings or on terraces.

Utilitarian buildings, including structures like the Jaigarh Fort and Jai Singh's Jantar Mantar, adopt a similar plastered masonry construction, contributing to the timeless architectural aesthetic of Jaipur.

Internally, the walls undergo a transformation, featuring recesses for storage, especially in kitchens, due to their substantial thickness. Additionally, wall plastering may include the intricate araish technique, using marble powder and semi-precious stones for a luxurious, tactile finish, primarily reserved for prominent areas or those in direct contact with occupants. This tactile comfort adds to the opulence amidst Jaipur's climate.

DIVERSITY IN SIZE AND COMPLEXITY OF JAIPUR DWELLINGS

To form the foundation of our study, we have curated a diverse selection of dwellings varying in size and complexity. Ranging from compact residences like the Pareek Sadan house to grand urban palaces such as the Rajputana haveli and Raja Udai Singh ji ki haveli, our corpus encompasses a wide spectrum.

In large houses, limited options exist for creating generously proportioned rooms, evident in the consistent depth of bays. Attempts to accommodate larger areas, like the Mothi Mahal in the Jai Singh Minister haveli, often exhibit signs of structural strain. Notably, the Raja Udai Singh ji ki haveli boasts exceptionally spacious rooms under chandnis, achieving spans of over 5.50 meters, albeit with structural intricacies that remain undisclosed.
To maximize space, double-depth sections with diaphragm arches are employed, supplemented by lateral areas like inner tibaras or jharokhas. Despite these efforts, the main emphasis in larger residences remains on courtyard dimensions, allowing for wider spans along their borders.

Conversely, in smaller houses like the Peeli haveli, the compact size of the courtyard is prominent. For instance, the Peeli haveli's central courtyard spans a mere 1.10 meters in width and 2.10 meters in length, with narrow original corridors further emphasizing spatial constraints.

EXPLORING COURTYARD ARRANGEMENTS IN JAIPUR'S TRADITIONAL HOUSES

My research journey across India, delving into diverse subjects spanning history, language, architecture, and lifestyles, eventually led me to the captivating world of oral tradition within the country's tribal societies. In 1996, as fifty million Indians still identified with tribal communities, I became intrigued by the profound meaning these communities attributed to their actions.

Focusing my attention on Jaipur's havelis, I embarked on the premise that their architecture serves as a repository of symbols deeply entrenched in Hindu culture and religion. Mere description of their patterns seemed insufficient; I sought to unlock their underlying significance.

As articulated by Sunand Prasad, cited by Shikha Jain, the term "haveli" originates from an ancient Arabic word denoting "enclosure." The term "hawala," derived from "hawaleh," meaning "around" or "transform," further adds layers to its meaning. Additionally, in Hindi, "hava" signifies air, wind, or breeze, suggesting another potential etymology. Regardless, "haveli" is grammatically feminine in Hindi, a characteristic shared by many words ending in "i."

While havelis vary across India and are known by different names in different regions, those in Rajasthan, the focus of our study, are constructed with reverence to familial clan traditions and imbued with the spiritual essence of mystical India, guided by the ancient principles of Vastu.

Intrigued by these architectural marvels, I embarked on a journey to unravel their secrets, shedding light on the rich cultural tapestry of Jaipur's havelis.
In addition to the rich tapestry of Hindu culture and Vastu principles, Jaipur's havelis bear the imprint of diverse cultural influences, including those brought by the Mughals. Moreover, the region's strategic location near trade routes played a pivotal role in shaping architectural nuances.

The influence of the Southern Silk Road, a bustling hub of commerce, is particularly noteworthy. Here, goods exchanged ranged from Chinese silk for Indian pharmacopoeia to Indian fabrics for Venetian glasses and crystals, enriching the cultural exchange along the route. These trade dynamics necessitate comparisons between dwellings in Jaipur and Amber, along with insights drawn from the nearby Shekhawati region.

By exploring these cross-cultural influences, we gain deeper insights into the intricate tapestry of Jaipur's havelis, reflecting a convergence of diverse customs, traditions, and trade networks.

The Ajmeri Gate

Museum of Legacies

Nataniyon Ki Haveli

UNRAVELING THE MYSTIQUE OF SARGASULI AND ISAR LAT IN JAIPUR

Sargasuli, meaning “stairway to heaven,” or Isar Lat, translated as “Ishwar’s tower,” stands as a prominent landmark in Jaipur’s walled city. Erected by Sawai Ishwari Singh, the second monarch of Jaipur following founder Sawai Jai Singh, this structure is among the tallest freestanding edifices in the vicinity.

Historians have not attributed a specific purpose to its construction, yet local folklore offers intriguing narratives. One tale suggests a commemoration of a significant wartime triumph, while another hints at a clandestine love story. Legend has it that Sawai Ishwari Singh, smitten by a maiden residing opposite the tower, faced societal barriers due to her father’s position as his prime minister, Hargobind Natani. Hindered by caste restrictions and social norms, the king’s only recourse to steal glances at his beloved was to erect the towering Isar Lat.

TRIPOLIA BAZAAR: A GLIMPSE INTO LOCAL CITY LIFE

Nestled adjacent to the Tripolia Gate, Tripolia Bazaar serves as a vibrant hub primarily catering to Jaipur’s residents. Acknowledging the pivotal role of trade and commerce, the Jaipur Maharajas generously sponsored an array of bazaars along the city’s main thoroughfares.

Unlike the upscale atmosphere of Johri Bazaar, Tripolia Bazaar exudes a more down-to-earth ambiance. Here, visitors encounter an eclectic mix of shops offering a diverse range of goods, including utensils, groceries, and ready-to-eat food items. This bustling marketplace provides a captivating glimpse into the everyday life of the city’s locals, offering an authentic experience for visiting tourists.

UNVEILING THE SIGNIFICANCE OF TRIPOLIA: GATEWAY TO JAIPUR

As its name suggests, Tripolia, meaning “three doorways,” comprises three gates, with a central grand entrance flanked by two smaller ones. Positioned at a T-junction, Tripolia holds a pivotal place as one of Jaipur’s major intersections, with roads leading to iconic public spaces like Badi and Chhoti Chaupad, as well as the city’s expansion beyond the circumferential wall via the Ajmer gate.

Beyond its architectural significance, Tripolia serves as a multifunctional space. While still under the ownership of the royal household, it plays a crucial role in public festivities such as the Teej and Gangaur festivals, serving as the launch point for celebratory processions. Thus, Tripolia transcends its role as a mere gateway, transforming into a vibrant civic space that enriches Jaipur’s cultural tapestry.

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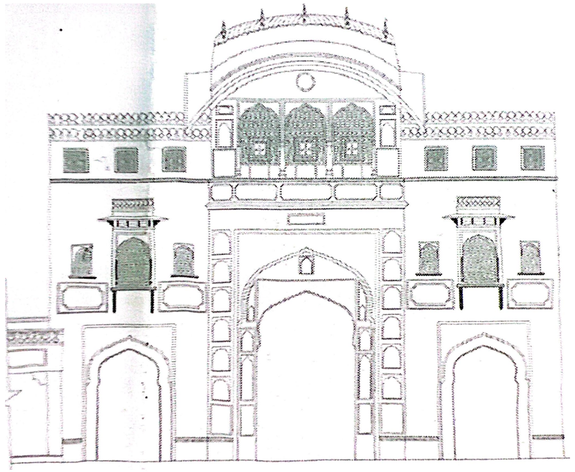
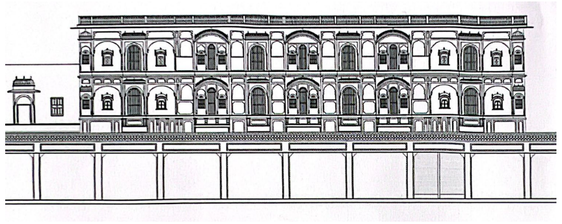


GOVERNMENT PUBLIC LIBRARY MAHARAJA SAWAI RAM SINGH

This landmark hosts Jaipur’s inaugural public library, blending colonial and traditional architecture seamlessly. Despite interior restoration needs, its exterior remains striking. Reflecting inclusivity, it symbolizes a shift in education accessibility. Colonial-inspired features like raised columns and faux pediments, distinguished by a contrasting color scheme, coexist with a traditional doorway reminiscent of a grand Haveli. This blend reflects the challenge of integrating imported styles into Jaipur’s landscape while accommodating the library’s new civic role.



The Ajmeri Gate

Museum of Legacies

Nataniyon Ki Haveli

HAWA MAHAL: A MASTERPIECE OF ARCHITECTURAL GRANDEUR

Translated as the “palace of wind,” Hawa Mahal stands as an iconic landmark, captivating the attention of web searches, picture postcards, and promotional posters by provincial and national tourism agencies. A must-visit destination for every tourist, it embodies Jaipur’s architectural splendor.

However, Hawa Mahal transcends mere functionality, serving as a meticulously crafted facade. While the lower sections accommodate a handful of rooms and open-to-sky courtyards, the upper floors are relatively shallow. Despite this, the structure’s elevation boasts a playful composition, adorned with an array of architectural elements such as windows, brackets, screens, and arches.

Commissioned by Sawai Pratap Singh, Jaipur’s third monarch, Hawa Mahal is notably his sole significant architectural endeavor. Dedicated to the royal ladies, it stands as a testament to cultural refinement and architectural brilliance in Jaipur’s landscape.

PANNA MEENA KA KUND: A HIDDEN GEM NEAR AMBER FORT

Nestled in Jaipur, Rajasthan, Panna Meena ka Kund is a historical stepwell dating back to the medieval period. While most travelers flock to see the renowned Amber Fort nearby, many are unaware of this yellow-colored stepwell tucked just next to the massive castle, built in the 16th century.

Stepwells like Panna Meena ka Kund are common in Rajasthan, given the arid desert landscape. Locals believe it was constructed to provide water to the people of Amer, later utilized in nearby temples and household chores. Additionally, it served as a cool resting spot for travelers, including businesspeople and saints.

Featuring a square shape with stairs on all four sides and a ceremonial room on the northern wall, Panna Meena ka Kund holds religious significance, often used for ceremonies before weddings or festivals.

Though not the largest, this stepwell is worth a visit, especially as it has been maintained by the local municipal authority for the past two decades, attracting many travelers seeking picturesque views.

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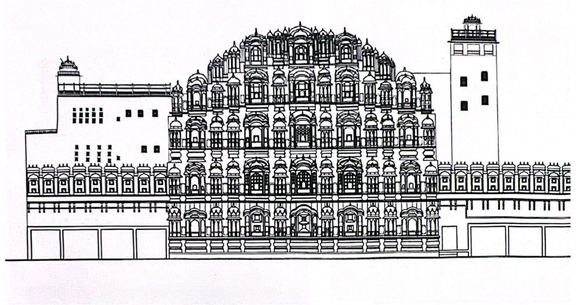

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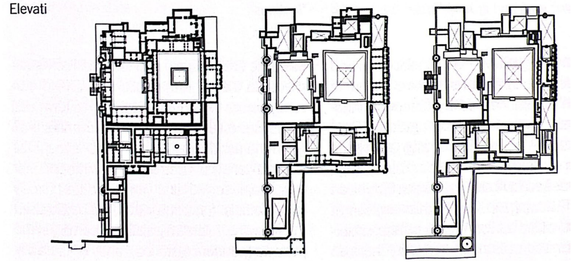

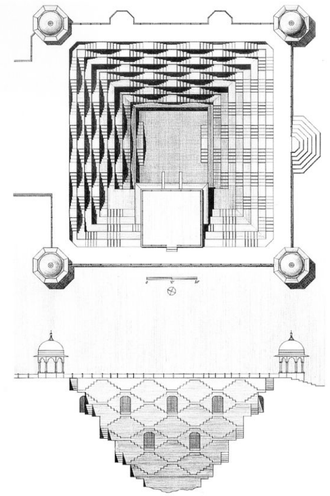

The Ajmeri Gate

Nataniyon Ki Haveli

EXPLORING JAIPUR'S STREET SYSTEM: A CRUCIAL ELEMENT OF IMAGEABILITY

In Jaipur, paths or street systems, locally referred to as 'Rasta,' play a central role in shaping the city's imageability. These pathways form the fundamental layout of the city, encompassing roads, streets, pedestrian walkways, and transit lines.

The walled city's plan revolves around a major road running from the Nahargarh Fort foothills to the Galtaji Sand dunes at a slight angle of 15°. This road is intersected by three perpendicular roads, creating nodes or town squares known as Chaupars. The street system follows a hierarchical layout, with main roads being 108 feet wide, secondary streets 54 feet wide, internal streets 27 feet wide, and local streets 13 feet wide.

The streets are significant components of the public image, often named after the occupation, caste, or notable personalities associated with the area. Interconnected and intersecting at right angles, they possess relative directional attributes, contributing to Jaipur's navigational identity.

EXPLORING MAJOR NODES: CHAUPARS OR TOWN SQUARES

Chaupars serve as significant cross junctions along the main axial roads of Jaipur, initially functioning as public squares and housing stepped wells for water supply. Over time, they evolved into landscaped enclosures adorned with ornamental fountains or water bodies. Three pivotal junctions, namely Chhoti Chaupar, Badi Chaupar, and Ramjang Chaupar, are formed at the intersection of the main axial road from Chandpole to Surajpole by three perpendicular roads. These Chaupars boast a width three times that of the main street, measuring 324 feet.
However, ongoing underground metro construction from Chandpole to Badi Chaupar has resulted in the demolition of water bodies and structures at Choti and Badi Chaupar, altering their historical landscape.

EXPLORING MINOR NODES: CHOWKS OR CROSS JUNCTIONS

Chowks are significant cross junctions typically created by the intersection of lateral roads and sector streets within chowkries. Key chowks in Jaipur include Subhash Chowk, Jaleb Chowk, and Chandini Chowk, among others.

Streets and chowks within internal chowkries, housing various clusters or mohallas, exhibit a blend of gridiron and organic patterns. The layout of these areas was not predetermined, resulting in a diverse mix of built forms.

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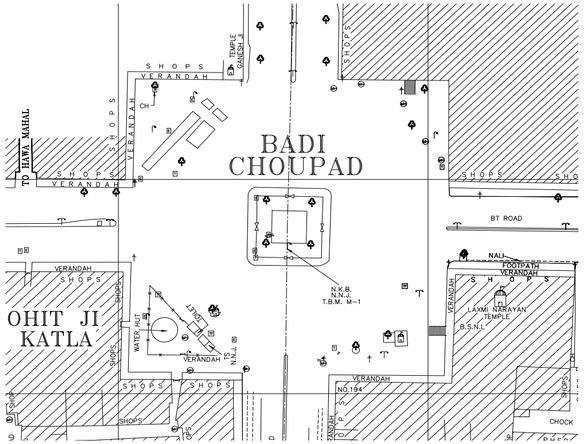
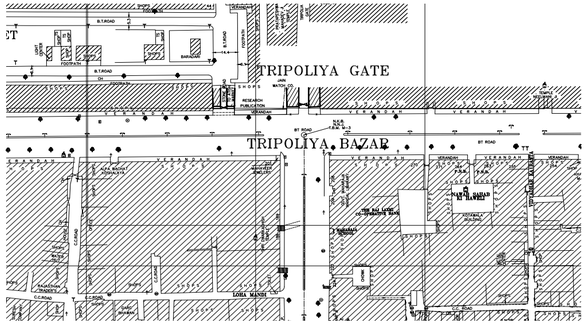
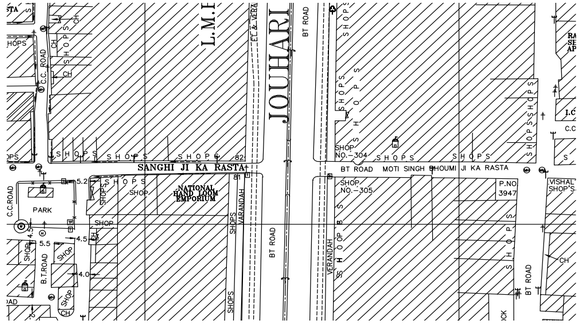
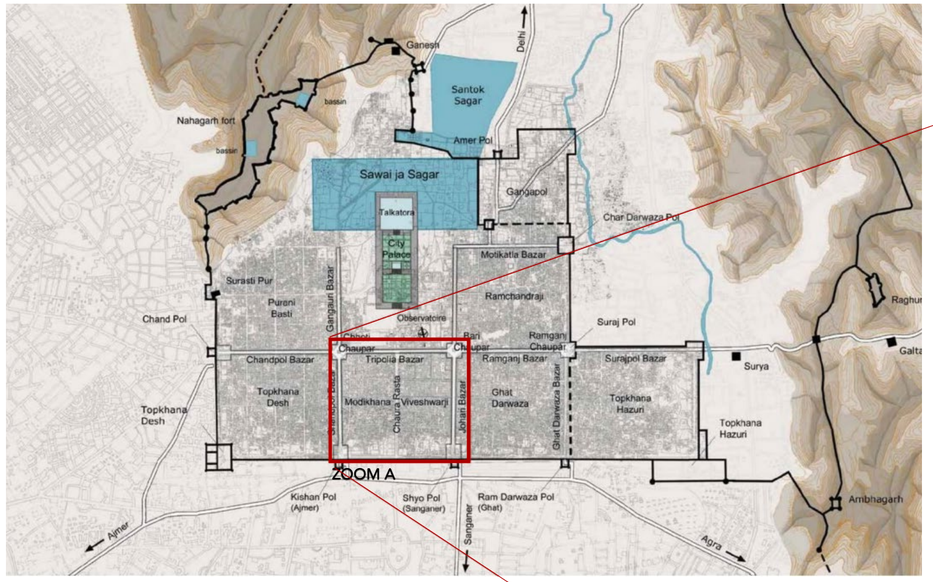


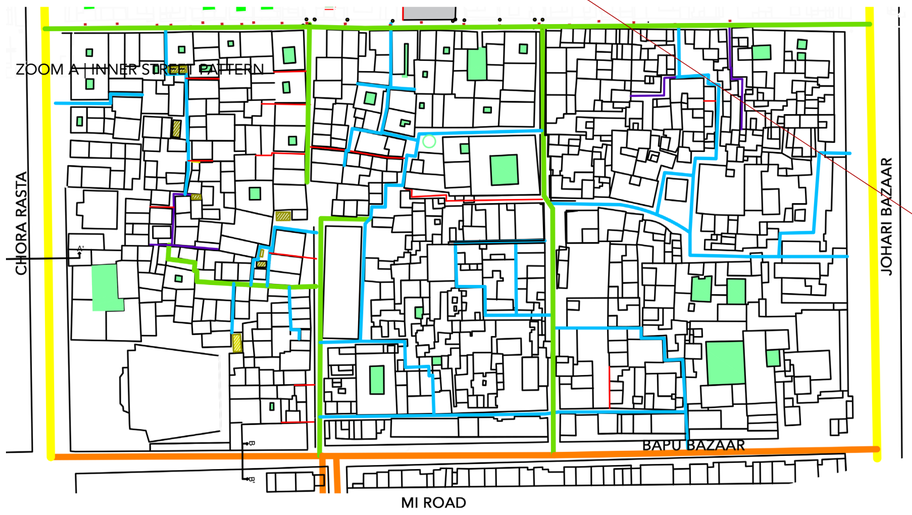
Museum of Legacies





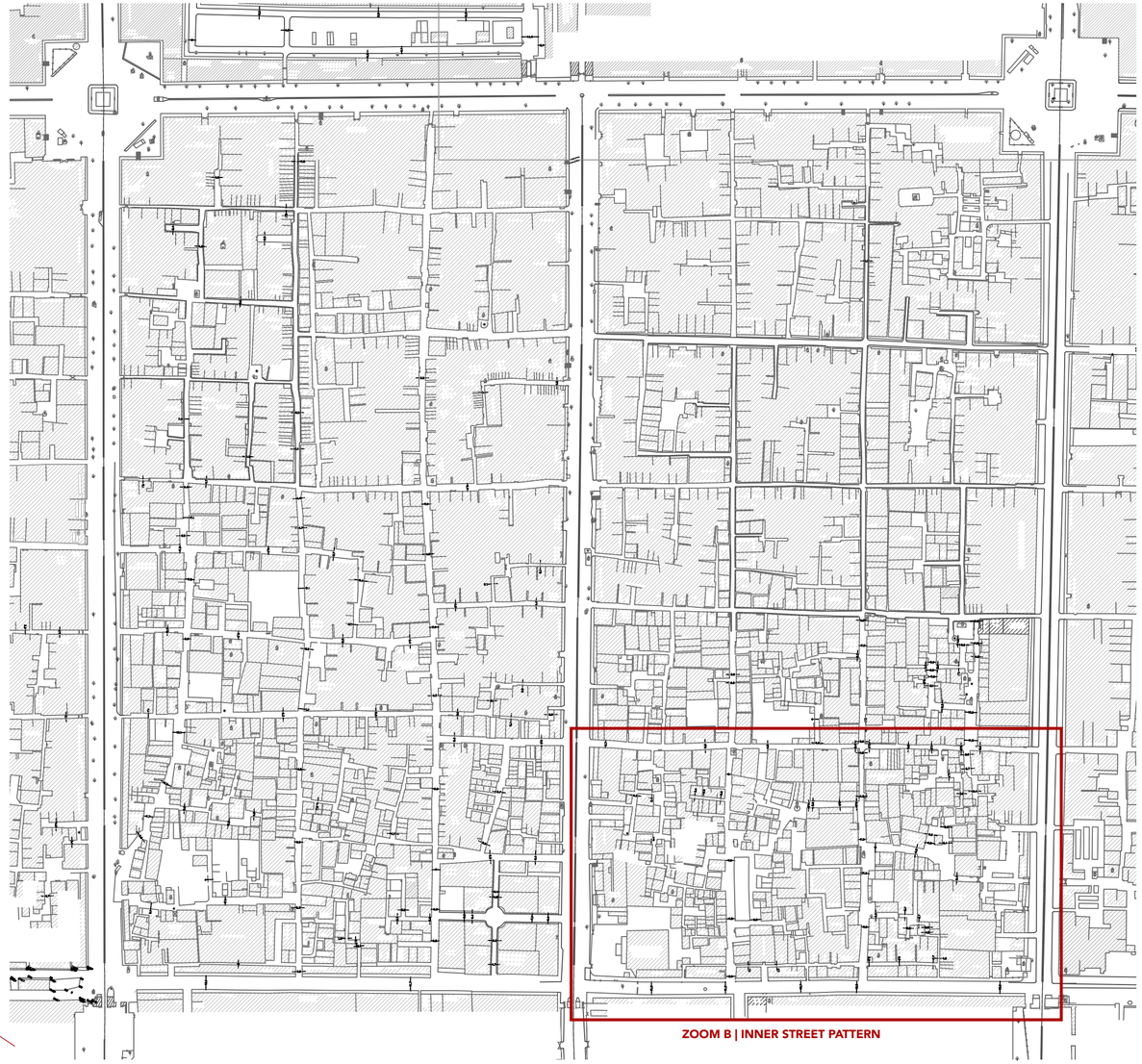


ZOOM B | INNER STREET PATTERN



Minor streets
Major streets
Commerical shops
Cul De sec
Green space
Main Bazaar

ZOOM A | INNER STREET PATTERN



Chapter 3.4:

MEMORY OF THE CITY
JAWAHAR KALA KENDRA

In this chapter, I explored the architectural essence and cultural significance of Jaipur's cultural center, designed by Charles Correa and dedicated to Jawaharlal Nehru. Inspired by Jaipur's ancient city plan and Vedic mandala principles, the center's design intricately weaves together celestial symbolism and functional spaces, reflecting planetary myths and architectural innovation. This exploration highlights the center's role as a tribute to Nehru and a symbol of Jaipur's architectural heritage.

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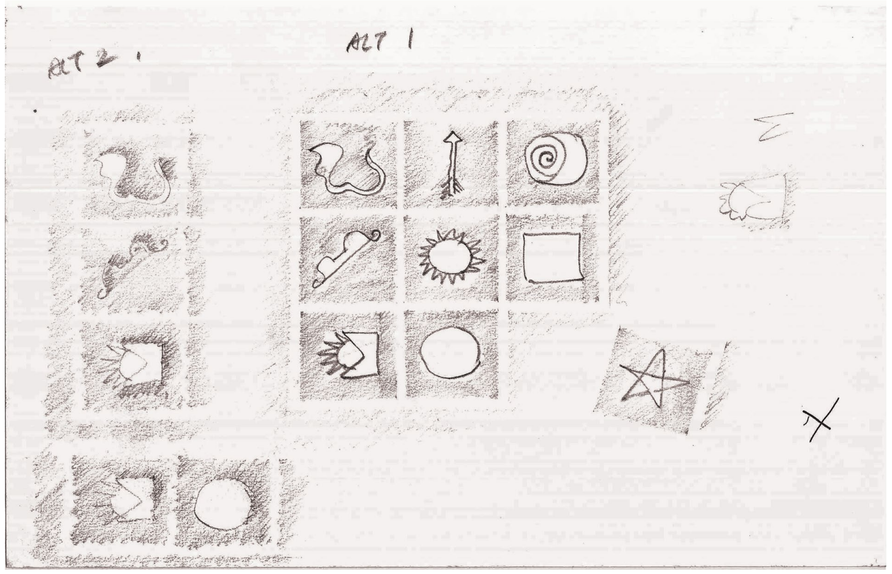

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JAWAHAR KALA KENDRA

Dedicated to India's revered leader, Jawaharlal Nehru, the cultural center in Jaipur stands as a testament to architectural creativity and homage. Situated in an open field near the university in a newly developed area, the concept for the building took shape in Correa's mind, culminating in its finalization in 1986.

Inspired by the original city plan crafted by the scholar, mathematician, and astronomer Maharaja Jai Singh II in the mid-17th century, the center echoes the ancient Vedic mandala of nine squares representing the celestial bodies. Correa's design directly references this navagraha or nine-house mandala, with one square pivoted to honor the original city layout and serve as an entrance.

Each square, defined by towering 8-meter high walls, houses spaces reflecting the myths associated with specific planets. For example, the library finds its place in the square of Mercury, symbolizing knowledge, while theaters reside in Venus's domain, representing the arts. The astrological symbols of each planet adorn the walls, expressed through cut-out openings along the external facade.

Central to the design is a void square, following the Vedic Shastras, symbolizing the essence of the universe - Nothing, which is Everything. The flooring pattern in this square intricately depicts a lotus, symbolizing the sun.

Through its innovative design and reverence to tradition, the cultural center in Jaipur not only pays homage to a great leader but also serves as a beacon of architectural ingenuity and cultural significance.

CORREA'S MANDALA-INSPIRED ARCHITECTURE

Charles Correa's innovation begins at the hyper-local level, where he intuitively grasps the potential for transformative architectural design. Utilizing the ancient mandala as a dynamic foundation for contemporary structures, Correa pioneers a novel approach to spatial organization, diverging from conventional methods. His concept revolves around the idea of "worlds within worlds," facilitated by the interlocking technique and centered on the void as a pivotal element in spatial dynamics.

Correa's groundbreaking work marks the first instance of melding the mandala device with modern architectural language and programming. By abstracting architectural principles from India's rich history and reinterpreting them through various art forms, he crafts a distinctive architectural style. This approach, characterized by ambiguity, complementarity, and compresence, draws inspiration from Buddhist and Hindu cultural philosophies.

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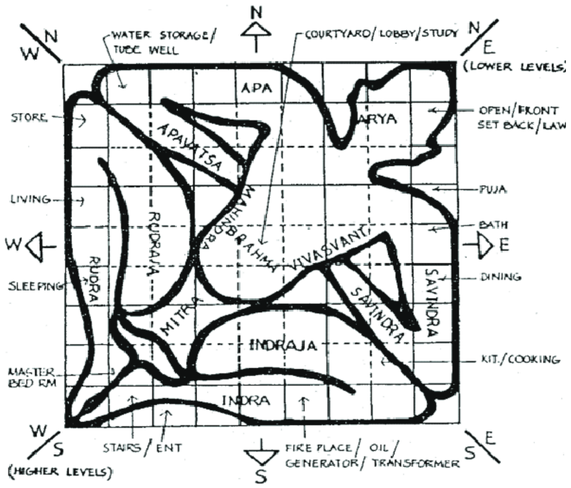
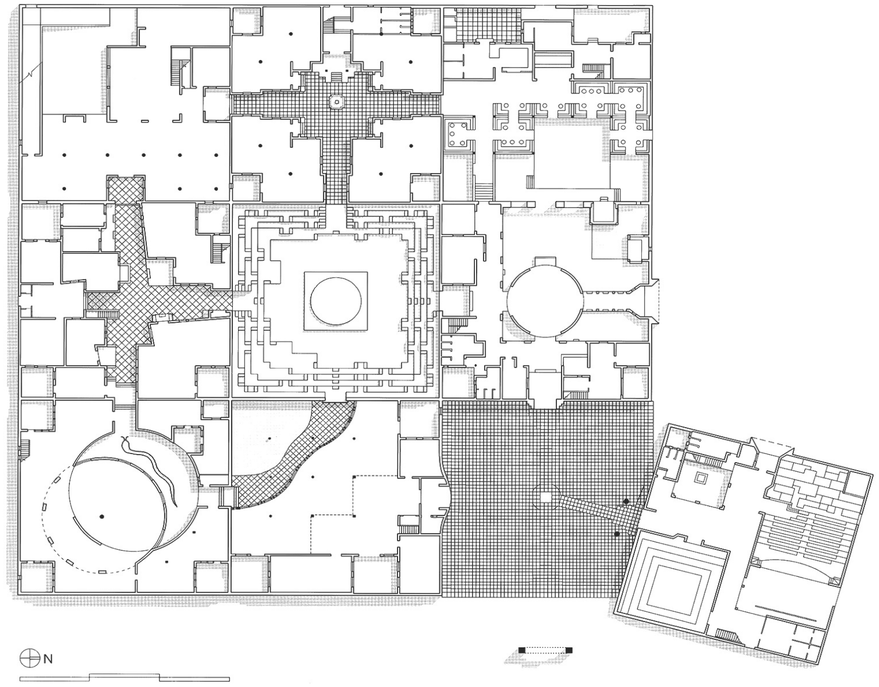


Correa's architectural vision has significantly influenced contemporary oriental architecture, establishing a paradigm rooted in cultural heritage yet adapted to the demands of modernity. His exploration of ambiguity and interconnection resonates as a testament to the enduring relevance of traditional wisdom in shaping innovative architectural expressions.

Correa's architectural approach revolves around three fundamental themes: the 'void,' the 'interlock,' and the 'worlds of worlds,' all rooted in the mandala concept. The 'void' occupies a central position within the mandala, serving as a space for interaction and exchange, around which other complementary spaces are organized. The 'interlock' technique defines the mandala's structure, embodying a complex yet cohesive arrangement reflecting the oriental mindset of coexistence and ambiguity.

In contrast, the 'worlds of worlds' theme illuminates the intricate balance of compresences within the mandala. This concept introduces varying degrees of void, from simple to absolute, reflecting a continuous progression in scale. Each scale change represents a leap into a new world, emphasizing the interconnectedness of architectural elements within a larger context.

Correa's architecture operates on multiple scales, from individual details to communal spaces, facilitating intimacy and continuity throughout the built environment. Through these themes, his work embodies a holistic system that articulates different levels of interaction and connectivity within architectural spaces.



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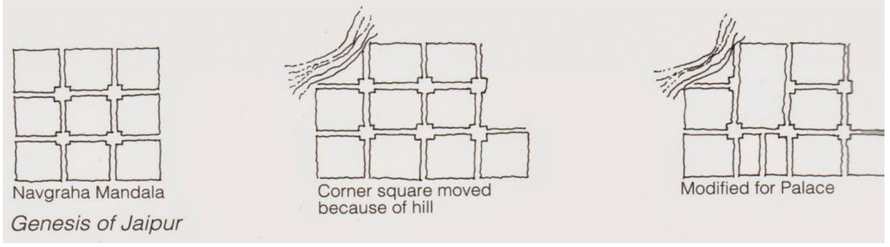

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COSMIC INSPIRATION IN ARCHITECTURE: JAWAHAR KALA KENDRA

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JAIPUR'S DUAL MYTHIC HERITAGE: NAVGRAHA MANDALAS AND SCIENTIFIC PROGRESS

Maharaja Jai Singh, the visionary ruler behind Jaipur's famed pink city, was driven by two seemingly contradictory sets of mythic ideals. On one hand, he was inspired by the ancient myths of the Navgraha mandala, believed to have influenced Jaipur's city plan, where one planet was relocated to accommodate a hill. On the other hand, Jai Singh embraced the progressive myths of Science and Progress, evident in his construction of the Jantar Mantar astronomical instruments for precise celestial measurements.

This duality is mirrored in Jaipur itself, characterized by the clarity of its layout, efficient water management, and keen understanding of socio-economic dynamics. Jai Singh's vision transcended time, bridging past and future, material and metaphysical realms, and macro and micro scales.

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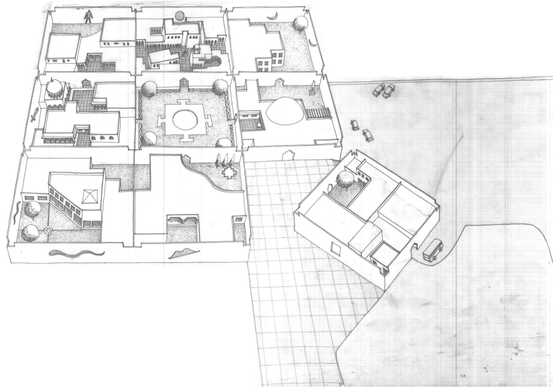
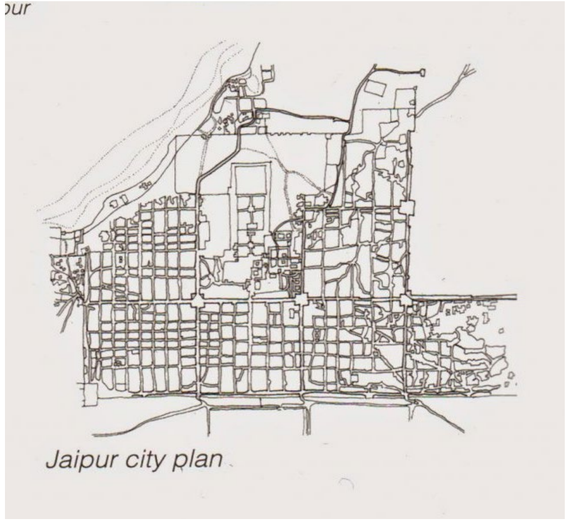
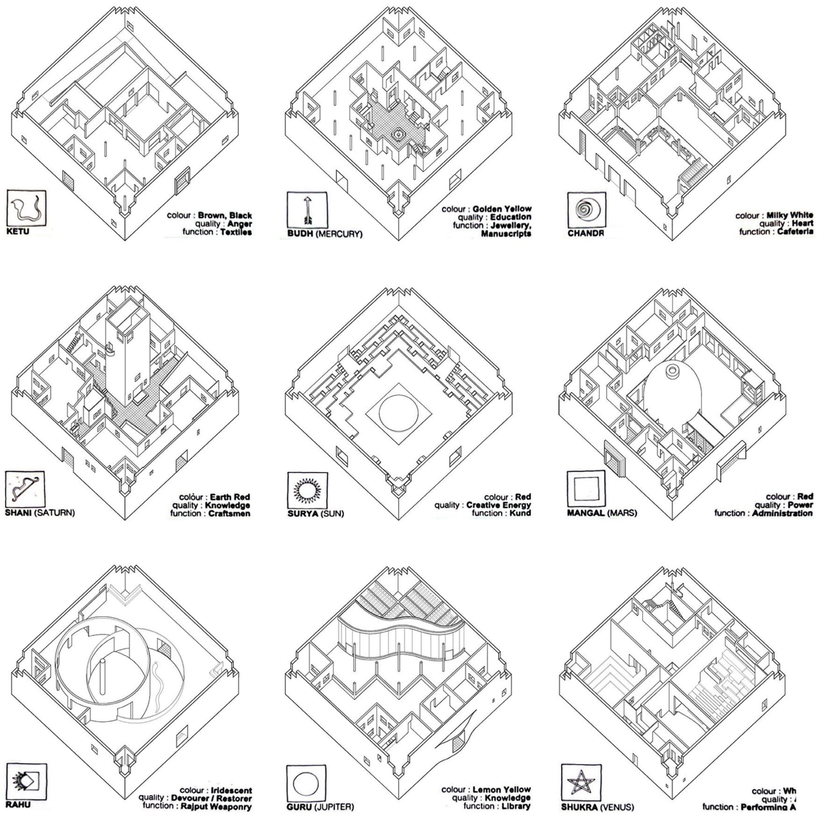
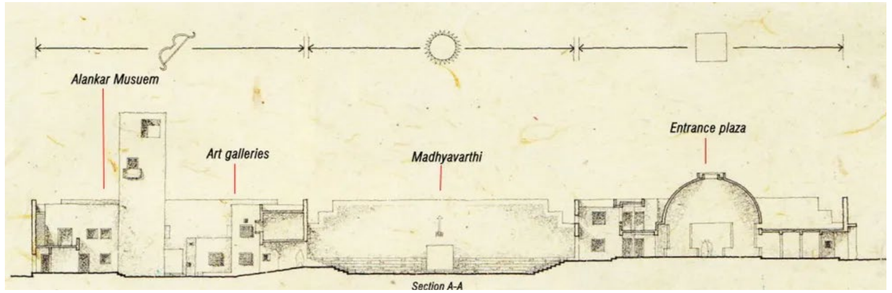




In many ways, Jai Singh shares parallels with Pandit Jawaharlal Nehru, India's first Prime Minister, who similarly sought to blend India's rich past with its aspirations for the future. This Arts Centre, dedicated to Nehru, serves as a metaphor for both men and Jaipur itself. Like them, it embodies a dual-coding: a contemporary structure rooted in ancient cosmological concepts, such as the Navgraha mandala, with deliberate gestures to honor the past while embracing the future.





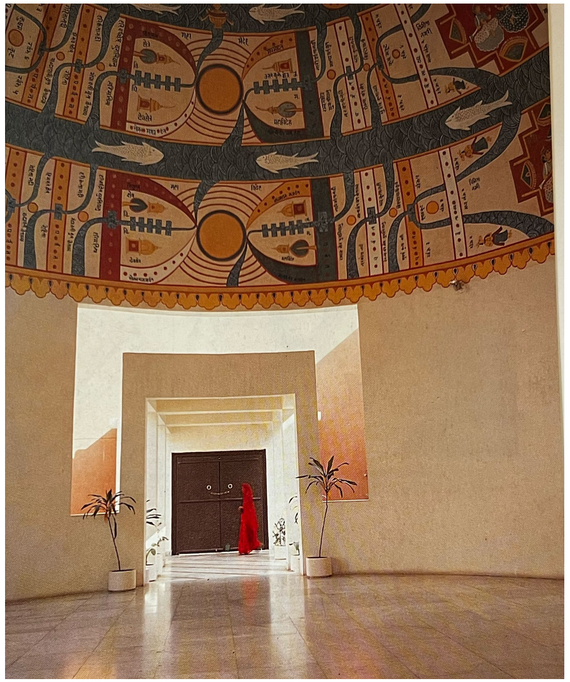
The external walls of the building (including those around the central kund) are clad in red Agra sandstone, topped by a coping of beige Dholpur stone - the same materials used for the Jantar Mantar Observatory, in the Red Fort at Agra, and in Fatehpur Sikri.

On these external surfaces, the presence of each of the planets is expressed by its traditional symbol inlaid in white marble (embellished, where necessary, with polished black granite and mica slate), recalling again the precisely calibrated surfaces of the astronomical instruments at the Jantar Mantar Observatory.

SYMBOLISM AND FUNCTIONALITY: THE NAVGRAHA-INSPIRED DESIGN OF JAIPUR'S ARTS CENTRE

The Arts Centre in Jaipur ingeniously incorporates the symbolism of the Navgraha mandala, where each of the nine planets is represented by a square measuring 30m x 30m, enclosed by imposing red sandstone walls standing at 8m high.

Divided into nine distinct sections, the Arts Centre's program aligns with the myths associated with each planet. For example, the Guru square, symbolizing Learning, hosts the Library, while the Chandra square, representing Pleasure, accommodates related facilities. Traditional symbols of each planet adorn the walls, meticulously crafted in marble and stone inlay. At the heart of the design, in accordance with ancient Vedic shastras, lies a void square, symbolizing the primordial Nothing, the ultimate source of energy. Mangal, corresponding to Jupiter and symbolizing Power, serves as the entry point to the complex. Here, the Director and administrative offices are located, emphasizing the significance of Power. Along the walls of Mangal Mahal, explanations of Navgraha are displayed, while beneath the dome, a Jain cosmograph vividly portrays elements of the manifest world.



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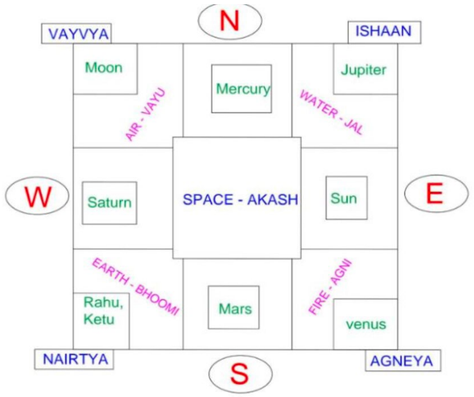

Fig. 2. Vastu Elements and Planet Position

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MYTHIC SYMBOLISM AND ARCHITECTURAL HARMONY AT JAIPUR'S ARTS CENTRE

The Arts Centre in Jaipur stands as a testament to the harmonious fusion of mythic symbolism and architectural design. Each aspect of the center's construction and layout reflects a deep reverence for the cosmic principles embodied by the Navgraha mandala.

At the heart of the design lies the representation of each of the nine planets, encapsulated within squares of precise dimensions and bordered by majestic red sandstone walls towering 8 meters high. This deliberate choice of material not only lends a sense of grandeur to the structure but also harks back to Jaipur's architectural heritage, where red sandstone is a hallmark of the region's iconic buildings.

While the exterior walls of each planet square remain uniform in their red sandstone facade, the interiors are adorned with vibrant colors, emotive imagery, and mythic symbols that are traditionally associated with the respective planet. This meticulous attention to detail serves to imbue each space within the center with its own unique atmosphere and character, enriching the overall experience for visitors.

Moreover, the center's programming is carefully disaggregated into nine separate groupings, with each section corresponding to the myths and attributes of a specific planet. For example, the Guru square, representing Learning, is home to the Library, while the Chandra square, symbolizing Pleasure, accommodates facilities aimed at fostering enjoyment and relaxation.

The integration of traditional symbols of the planets into the architectural elements, such as marble and stone inlays, further enhances the narrative and cultural significance of the center. These intricate details not only pay homage to ancient wisdom but also serve as a reminder of the enduring connection between cosmic forces and human endeavors.

Central to the design philosophy is the concept of the void square, positioned as specified in ancient Vedic shastras. This symbolic void, representing the primordial Nothing and the ultimate source of energy, serves as a contemplative focal point amidst the bustling activity of the center.

In essence, the Arts Centre in Jaipur stands as a testament to the timeless wisdom of Vastu Shastra and the profound insights it offers into the relationship between architecture, cosmology, and human experience. Through its meticulous craftsmanship and thoughtful design, the center serves as a living embodiment of cultural heritage, inviting visitors to immerse themselves in a journey of exploration and discovery.

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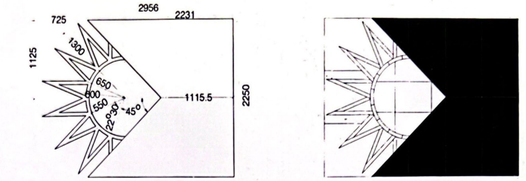
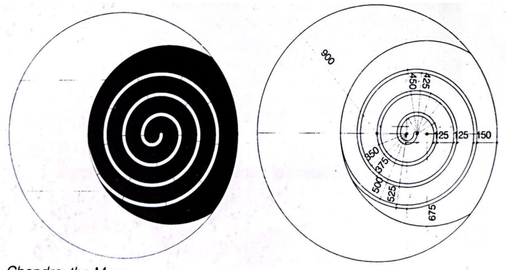


Traditional symbol of Rahu (inlaid in black granite, white marble and grey mica slate), depicting quite literally, the Sun being devoured by the Moon



Chandra: the Moon

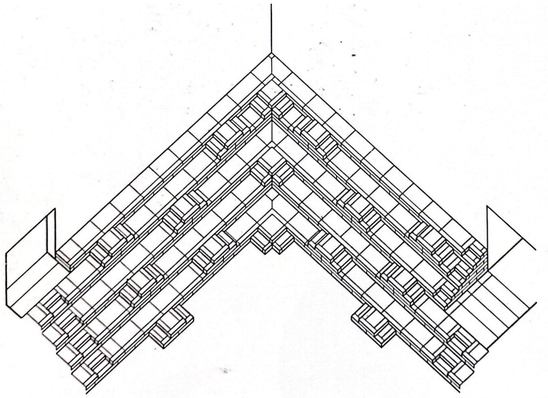
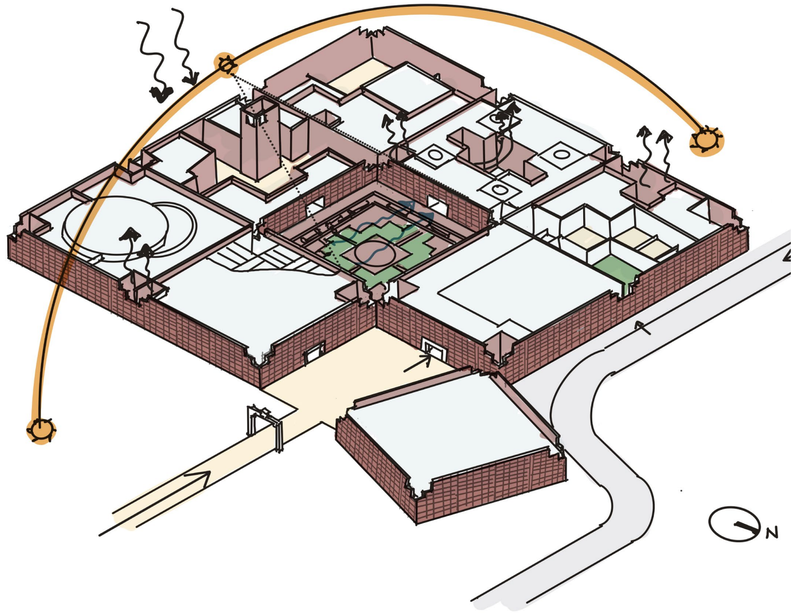


Diagram showing layers of stone blocks forming kund steps

Chapter 3.5:

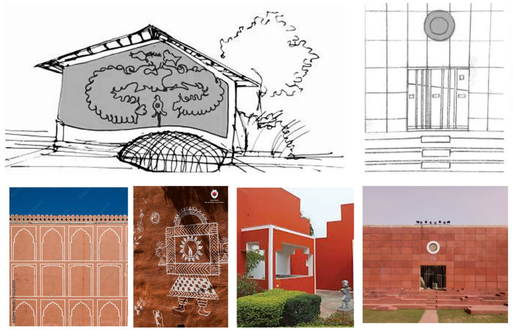
IMPORTANT FINDINGS

In this chapter, I explore Charles Correa's innovative architectural approach manifested in the design of Jawahar Kala Kendra (JKK) in Jaipur. Correa's integration of Jaipur's cultural heritage and urban principles, such as the Vastu Purusha Mandala and Navgrah system, is examined. The chapter delves into how these influences shaped the layout, function, and symbolic significance of JKK, emphasizing its role as a cultural nexus and architectural landmark.

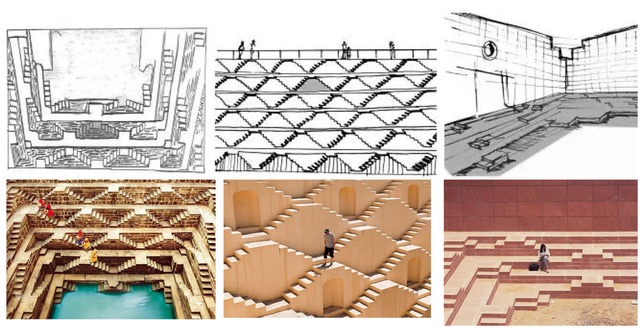


The tower is reminiscent of the watchtower at Jaigarh.

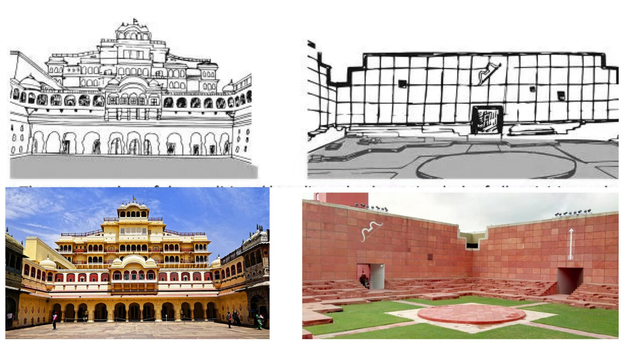
he area with the art galleries resembles the chopads.



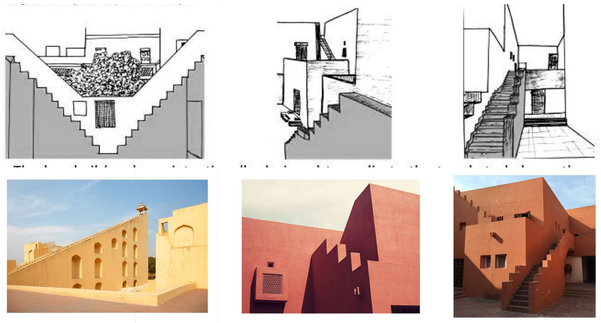
White murals on red sandstone hint at traditional mandanas or murals on walls.



Central OAT is inspired by the ancient stepwell.



The courtyard, like those of traditional havelis and palaces, is used for all activities and gatherings.



The staircase resembles the Jantar Mantar and the old traditional staircases of the forts.

SYNTHESIZING JAIPUR'S HERITAGE INTO ARCHITECTURAL INNOVATION: CHARLES CORREA'S APPROACH AT JAWAHAR KALA KENDRA

In this chapter, I delve into Charles Correa's architectural approach at Jawahar Kala Kendra (JKK), Jaipur, focusing on how he synthesized elements from the city into a cohesive architectural style. Correa's concept of Eclecticism in architecture is pivotal here, where he skillfully extracted inspiration from Jaipur's rich heritage to forge a new architectural language. One prominent source of inspiration was Jaipur's ancient step wells, which influenced the design of JKK's central open-air theater, demonstrating Correa's adeptness at reimagining historical elements for contemporary use.

Another significant influence was the Diya Burj watch tower at Jaigarh, mirrored in JKK's own watch tower. Though sharing similar shapes and proportions, each structure bears a distinct architectural impact, showcasing Correa's ability to innovate while honoring local traditions. Correa also drew from Jaipur's crossroads, known as "Chopad," integrating their spatial dynamics into JKK's layout to evoke the atmosphere of a miniature city within a larger urban context.

Furthermore, Correa adapted the concept of entrance gates from Jaipur's walled city, modifying their function and form to suit JKK's needs while preserving their symbolic significance. He also translated the vibrant paintings found in Jaipur into architectural elements, using white against a red sandstone backdrop and incorporating white marble accents along JKK's edges, thereby enriching the project's visual and cultural depth.

The influence of Jaipur's architectural traditions extends to JKK's staircase design, inspired by the steps of Jantar Mantar and traditional hovels, enhancing natural ventilation and aesthetic appeal. Moreover, Correa's incorporation of stone Jalis and enclosed pathways, reminiscent of Hawa Mahal corridors, underscores his commitment to integrating local architectural elements into JKK's design ethos. By contextualizing these inspirations, this chapter elucidates how Correa's sensitive reinterpretation of Jaipur's architectural heritage contributed to the enduring legacy of Jawahar Kala Kendra.

INTEGRATION OF ARCHITECTURAL PHILOSOPHIES AND CULTURAL ELEMENTS: CHARLES CORREA'S JAWAHAR KALA KENDRA (JKK) IN JAIPUR

Charles Correa's design of the Jawahar Kala Kendra (JKK) in Jaipur exemplifies a profound integration of multiple architectural philosophies and cultural elements. Inspired by the city's rich heritage and the principles of Vastu Purusha Mandala, Correa employed a nine-square grid layout for the complex. Each square within this grid corresponds to a specific function, reflecting his innovative interpretation of Jaipur's urban structure.
A distinctive feature of JKK is its adherence to the Navgrah system, where each block symbolizes a celestial body and is designed accordingly. The Venus block, for instance, is dedicated to drama with a white interior, while the Jupiter block serves as the library with a lemon yellow color scheme. This systematic approach not only organizes the functions within the complex but also imbues them with symbolic meaning, creating a cohesive architectural narrative.

The layout of JKK fosters connectivity and fluid movement, akin to navigating through a small city. The central Open Air Theatre (OAT), surrounded by various functional blocks and interconnected galleries, serves as the heart of the complex. Correa's meticulous attention to detail is evident in the design of the chhokadi-inspired entrance and the strategic placement of openings that allow natural light and ventilation throughout the building.

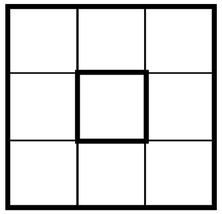
Moreover, these openings act as solar chimneys, enhancing environmental sustainability by minimizing reliance on artificial lighting and air conditioning. By balancing built mass with ample open spaces, JKK not only honors Jaipur's architectural heritage but also sets a benchmark for harmonizing cultural context with contemporary design principles. This holistic approach underscores the importance of integrating diverse inspirations to create architectural landmarks that resonate both aesthetically and functionally.

LESSONS FROM JAIPUR

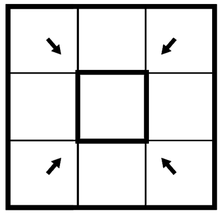
To implement these design principles in our projects, we can learn from Charles Correa's approach in Jaipur. First, by treating buildings like cities, we integrate seamlessly with local urban fabric. Second, integrating climate and materials ensures sustainability, following Correa's use of indigenous elements. Lastly, innovating architectural styles involves drawing inspiration from local culture, enriching our designs with unique, contextually relevant solutions.

CITY COLLECTION

CENTRAL:

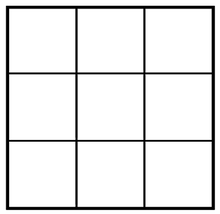


CENTER OF PERIPHERY

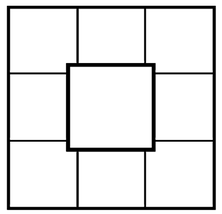


INTEROVERTED NATURE

HIERARCHY

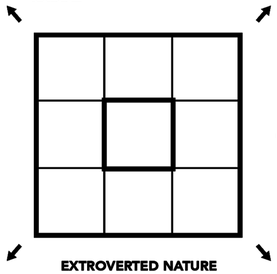


NO HIERARCHY

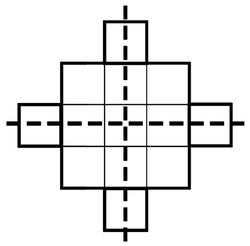


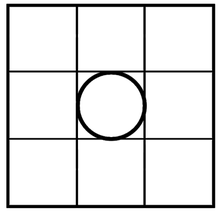
CHANGE IN SIZE

RADIAL



EXTROVERTED NATURE





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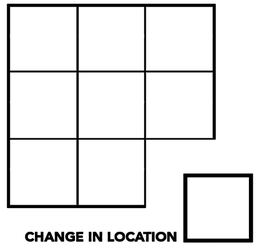
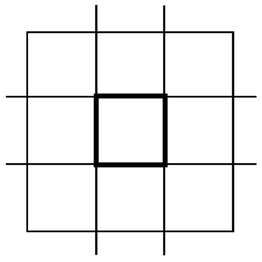
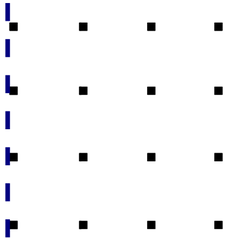


CHANGE IN LOCATION

GRID



REGULARITY AND CONTINUTY



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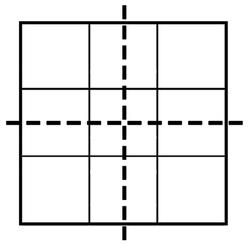

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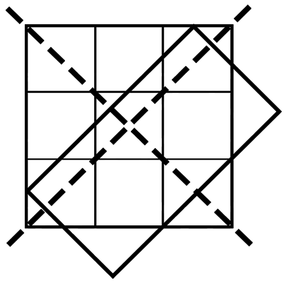
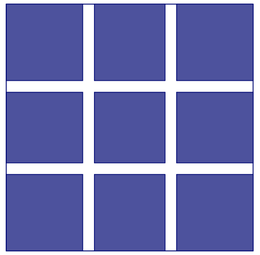
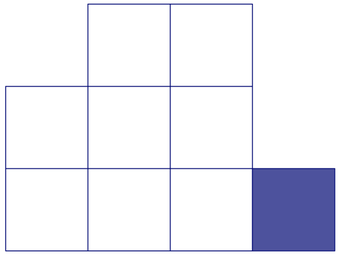


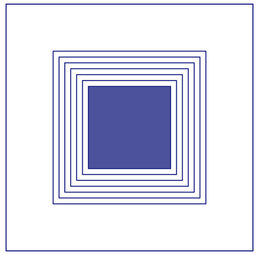
CHANGE IN AXIS



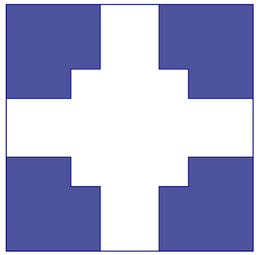
9 square Grid inspired by Vastu



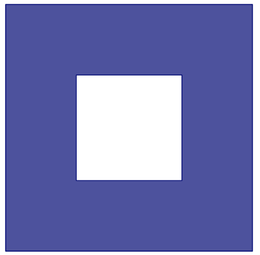
Shifting one block due to the topography of Jaipur city.



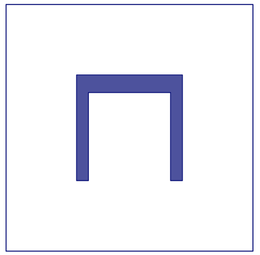
Ancient Stepwell system



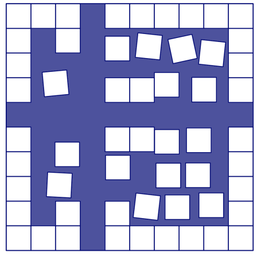
Jaipur Cross Road



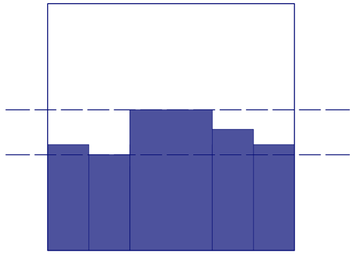
Traditional courtyard houses



Entrance Gateway



The breaking of order inside the main square block.



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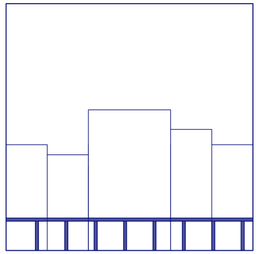
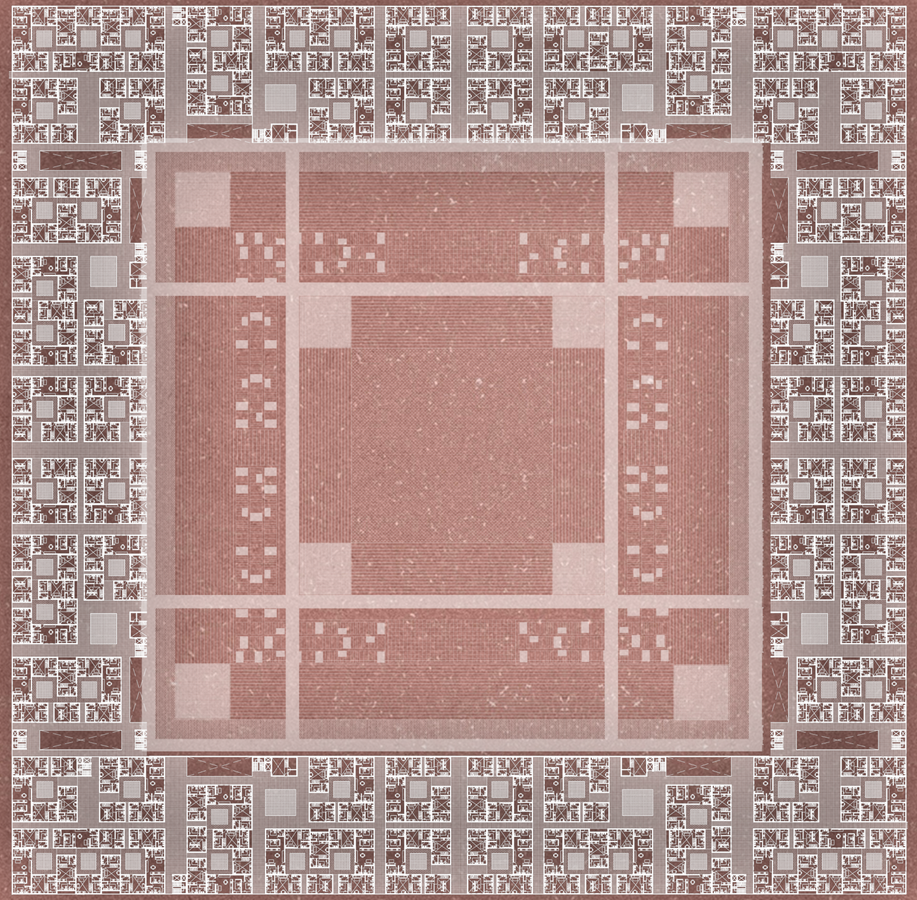


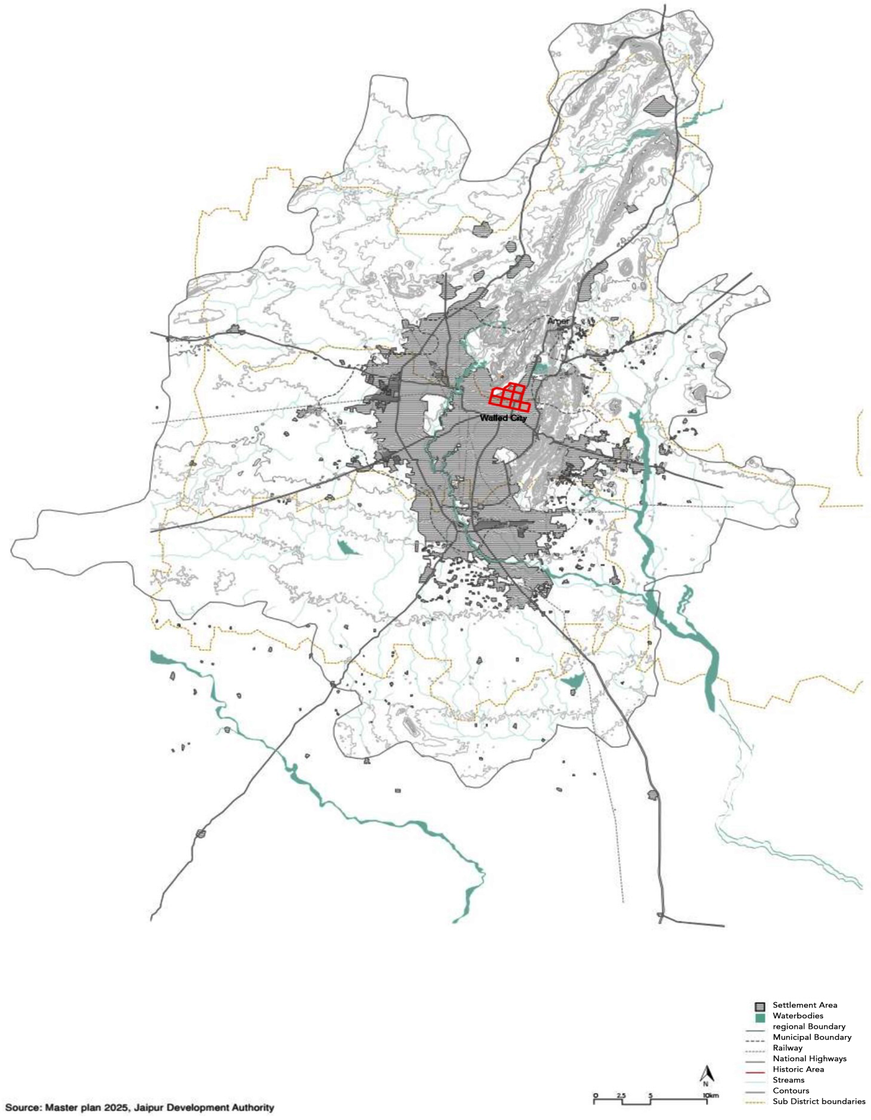
Shaded Pathways

Chapter 4:

PROJECT PROPOSAL

This thesis proposes the integration of traditional urban design principles from Jaipur into contemporary architecture, specifically addressing a new housing and recreational area near Bagru. Drawing inspiration from Jaipur's rich heritage and urban morphology, the design aims to foster a sustainable and culturally resonant development. Jaipur's distinctive nine square grid layout, courtyard planning methods, and adherence to Vastu principles serve as foundational elements guiding the project's design. Influenced by Charles Correa's approach in the Jawahar Kala Kendra and Le Corbusier's Venice Hospital, the proposal emphasizes connectivity and community interaction through its layout, while integrating passive cooling strategies and sustainable materials to address Jaipur's arid climate. Situated as a pivotal node amidst the city's southwest expansion and near the Ajmer-Delhi highway, the project not only supports urban growth but also preserves cultural identity and promotes economic vitality. By setting a precedent for future developments, this thesis aims to showcase how tradition can inform innovative contemporary architecture, contributing to Jaipur's sustainable urban evolution and celebrating its historical legacy.





Source: Master plan 2025, Jaipur Development Authority

MAJOR ISSUES WITH URBANIZATION IN JAIPUR:

Jaipur, a city renowned for its rich cultural heritage and architectural grandeur, faces numerous urban development challenges. Rapid population growth, increasing vehicular traffic, and infrastructural demands are exerting pressure on the city's existing resources and urban planning frameworks. The site in question, located within Jaipur city, exemplifies these issues and presents an opportunity to explore sustainable urban development strategies that balance heritage conservation with modern needs. This thesis aims to address the following key problems:

Overcrowding and Congestion:

Rapid urbanization has led to a significant increase in population density in cities, causing overcrowding and severe traffic congestion. This puts immense strain on infrastructure and public services, resulting in reduced quality of life for residents.
Lack of Affordable Housing:

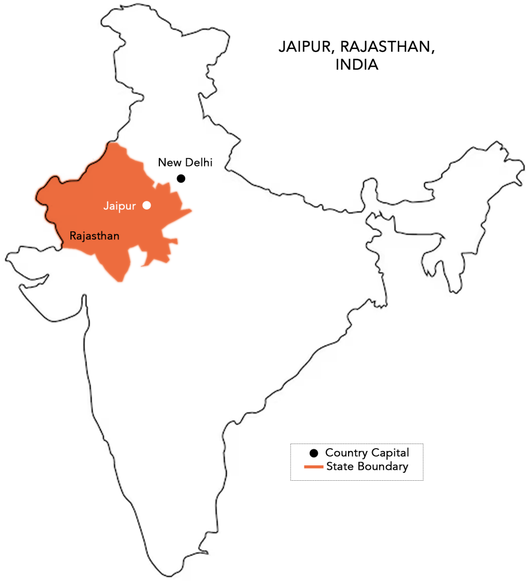
The high cost of land and housing in urban areas has made it increasingly difficult for low-income families to find affordable housing. This has led to the proliferation of slums and informal settlements where living conditions are often substandard.

Environmental Degradation:
The rapid pace of urbanization has exerted pressure on natural resources, leading to environmental degradation. This includes air and water pollution, loss of green spaces, and increased waste generation, which contribute to health issues and reduced biodiversity.

Inadequate Infrastructure:
Many cities in India struggle with inadequate infrastructure, including poor sanitation facilities, lack of access to clean water, unreliable electricity supply, and limited public transportation options. These deficiencies hinder economic growth and negatively impact public health and well-being.

Urban Sprawl:
Urbanization often leads to urban sprawl, characterized by the uncontrolled expansion of cities into surrounding rural areas. This results in the loss of agricultural land, natural habitats, and increased dependency on private vehicles, contributing to further environmental degradation and inefficiencies in service delivery.

Public Health Challenges:
Overcrowded urban areas are often hotspots for public health challenges, including the spread of infectious diseases due to poor sanitation, inadequate healthcare facilities, and high levels of pollution. Mental health issues are also prevalent due to the stressful urban environment.



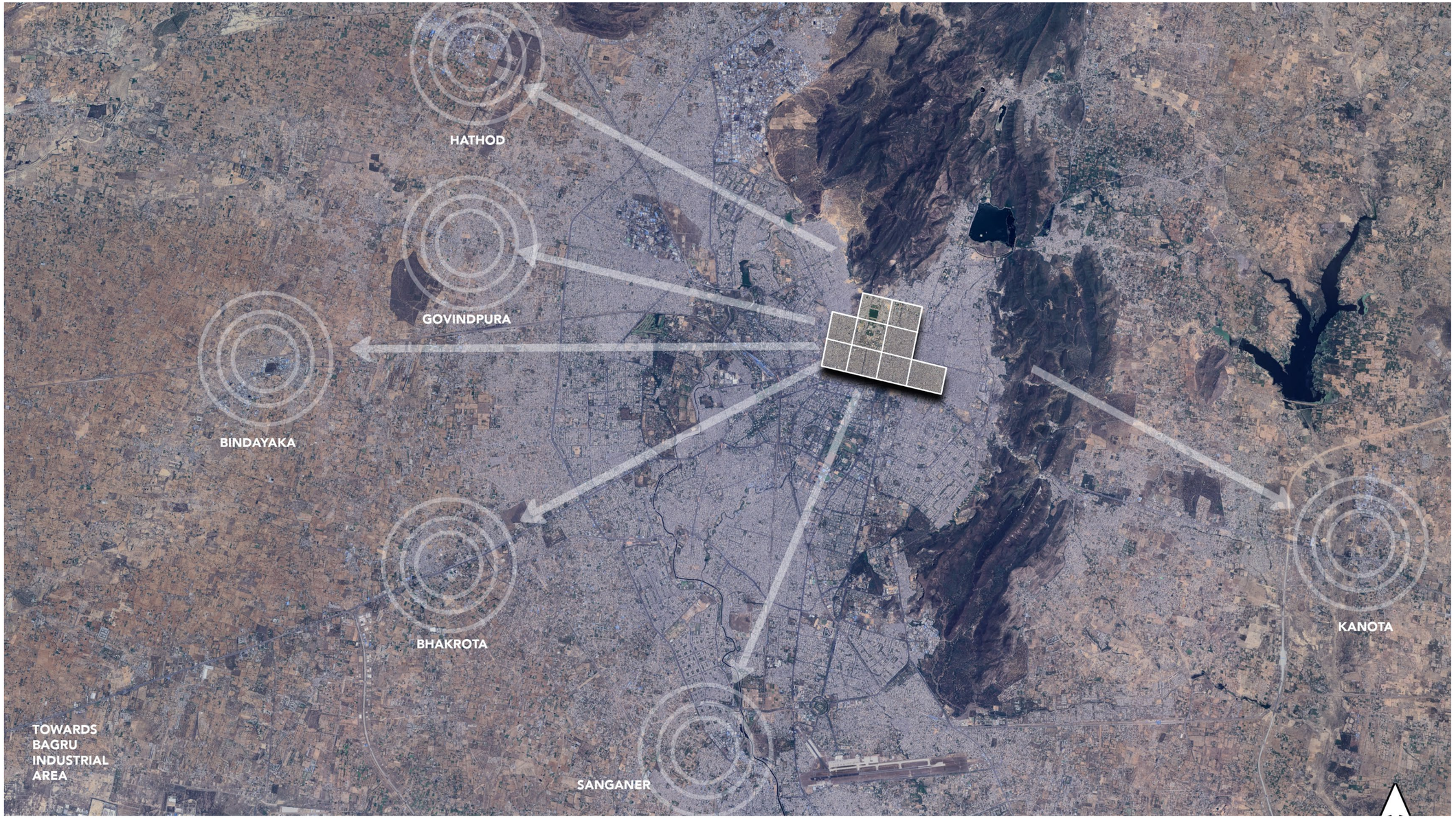
Waste Management Problems:
Rapid urbanization generates large volumes of waste, including solid waste and sewage, that many cities are ill-equipped to manage. Inadequate waste disposal systems result in environmental pollution and public health hazards.

Water Scarcity:
Many urban areas face severe water scarcity due to over-extraction of groundwater, inefficient water use, and contamination of water sources. This is compounded by the growing demand for water in densely populated cities.

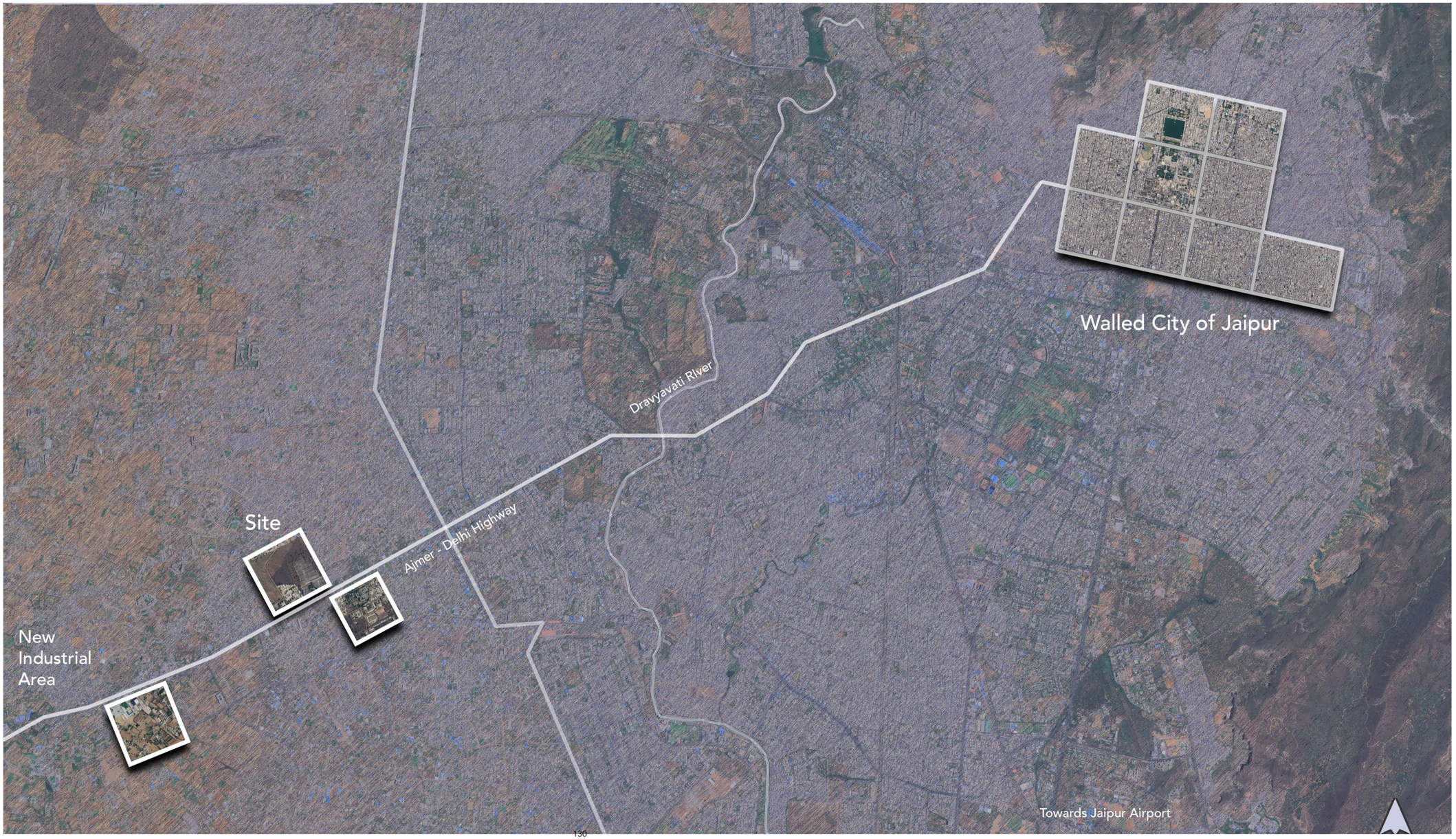
Governance and Planning Issues:
Urban governance often struggles to keep pace with rapid growth, leading to poor urban planning and management. This includes issues such as lack of coordination among various agencies, insufficient funding, and outdated policies that fail to address contemporary urban challenges.

Traffic and Transportation Issues:
Insufficient and poorly planned public transportation systems lead to increased reliance on private vehicles, causing traffic congestion, longer commuting times, and higher emissions of greenhouse gases and pollutants.

SITE CONTEXT



SITE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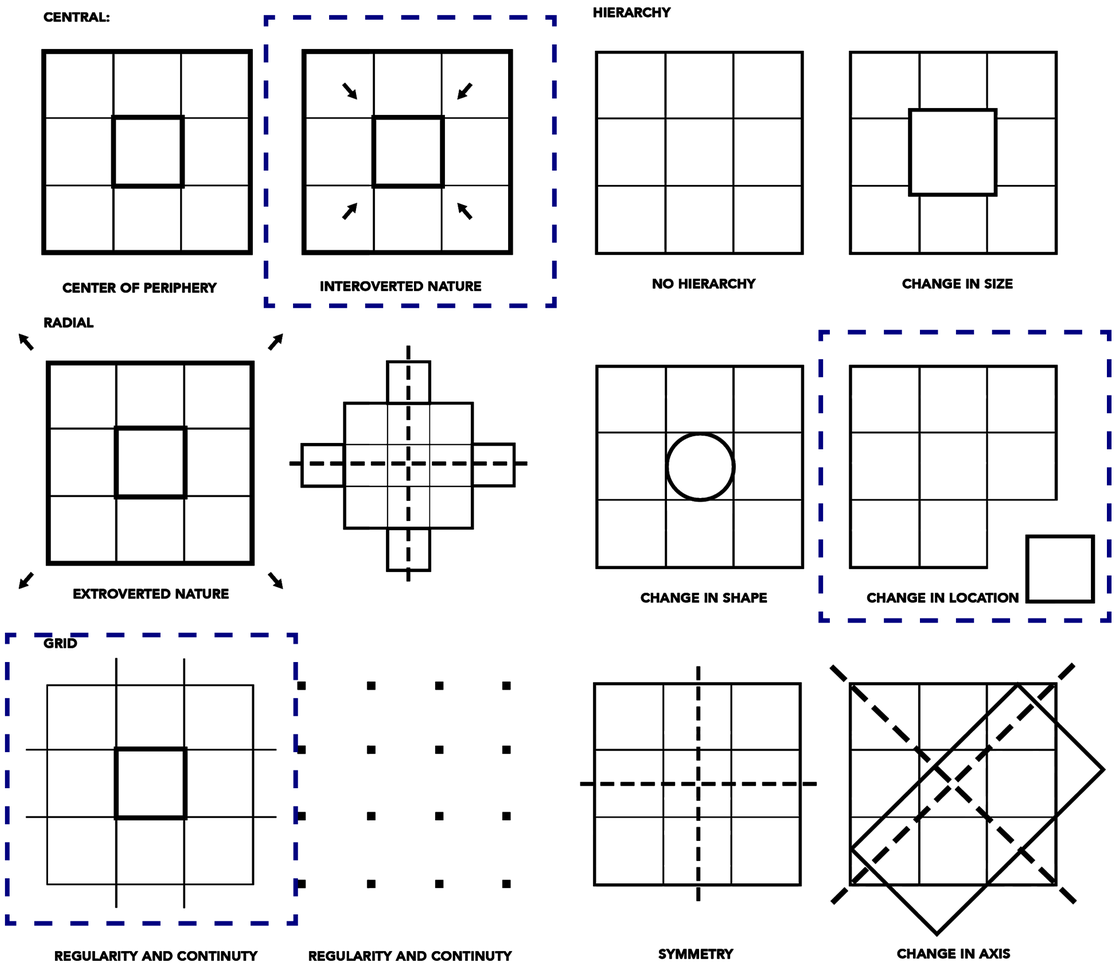
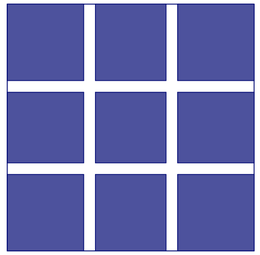
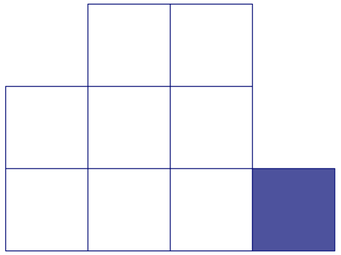
Dravyavati River
Ajmer - Delhi Highway
Site
New
Industrial
Area
Towards Jaipur Airport

DESIGN RULES

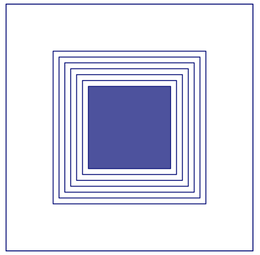




9 square Grid inspired by Vastu



Shifting one block due to the topography of Jaipur city.



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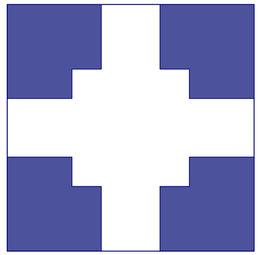

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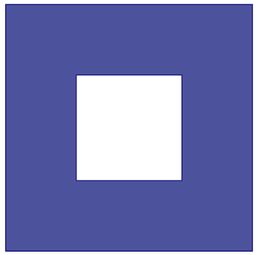

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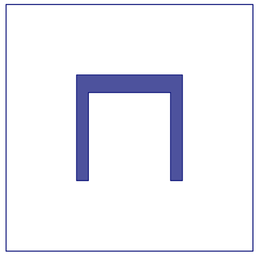
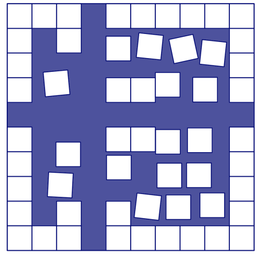


Entrance Gateway



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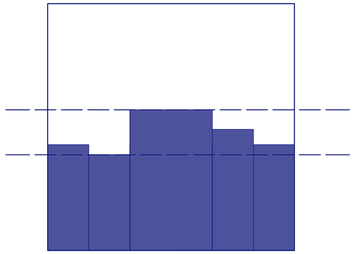

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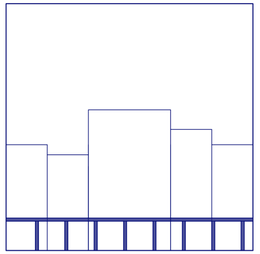
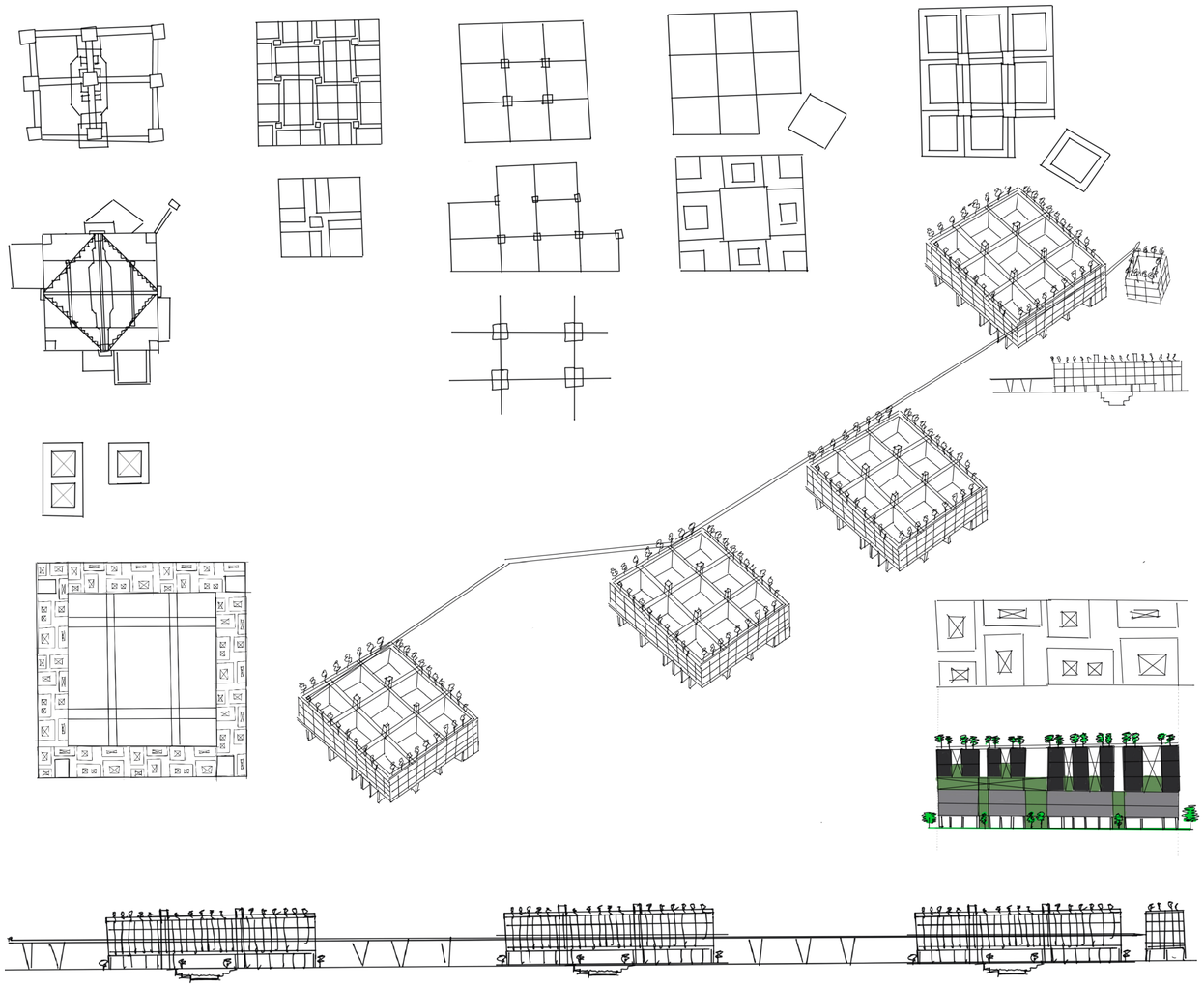
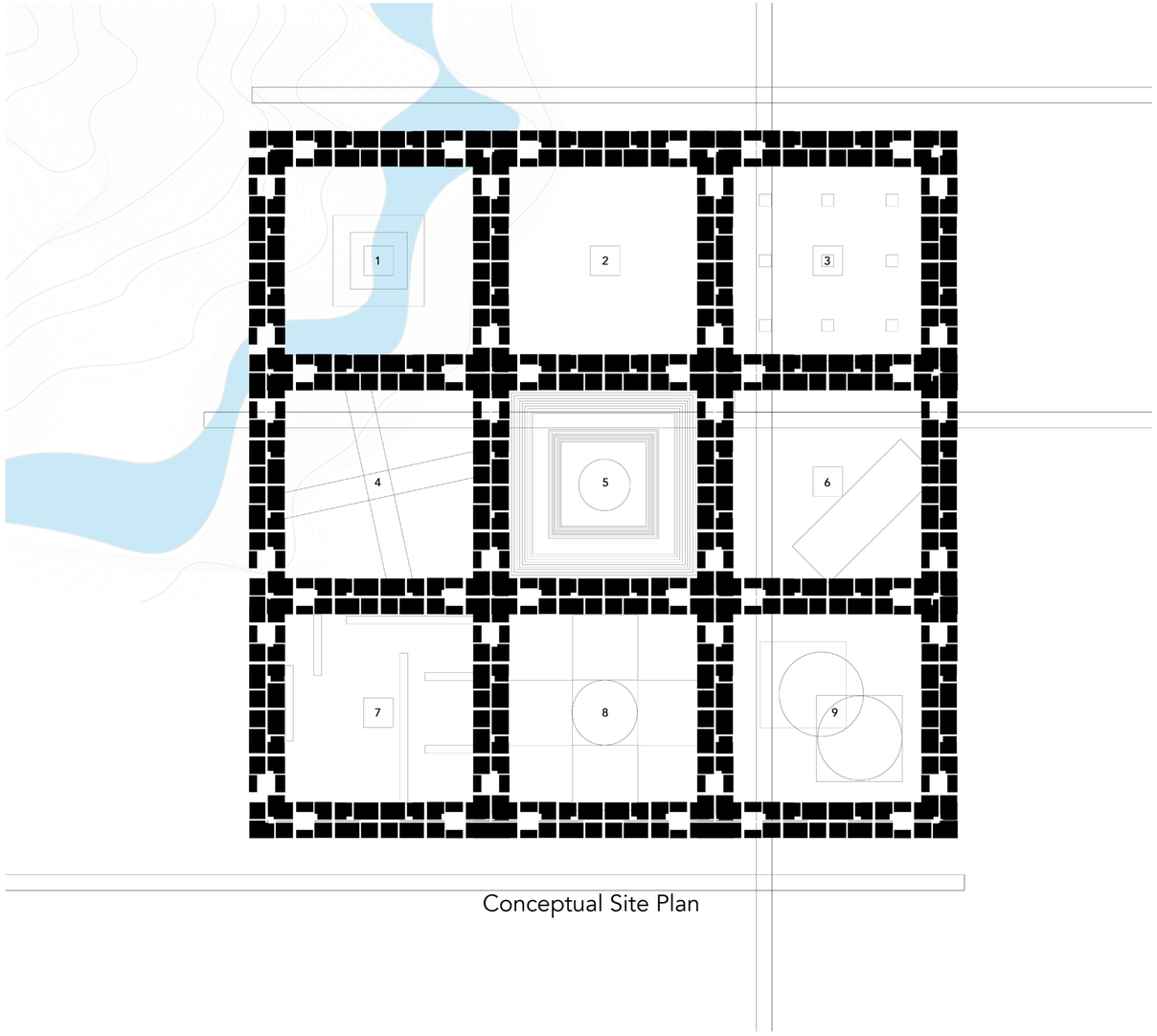


Shaded Pathways

CONCEPTUAL DIAGRAM

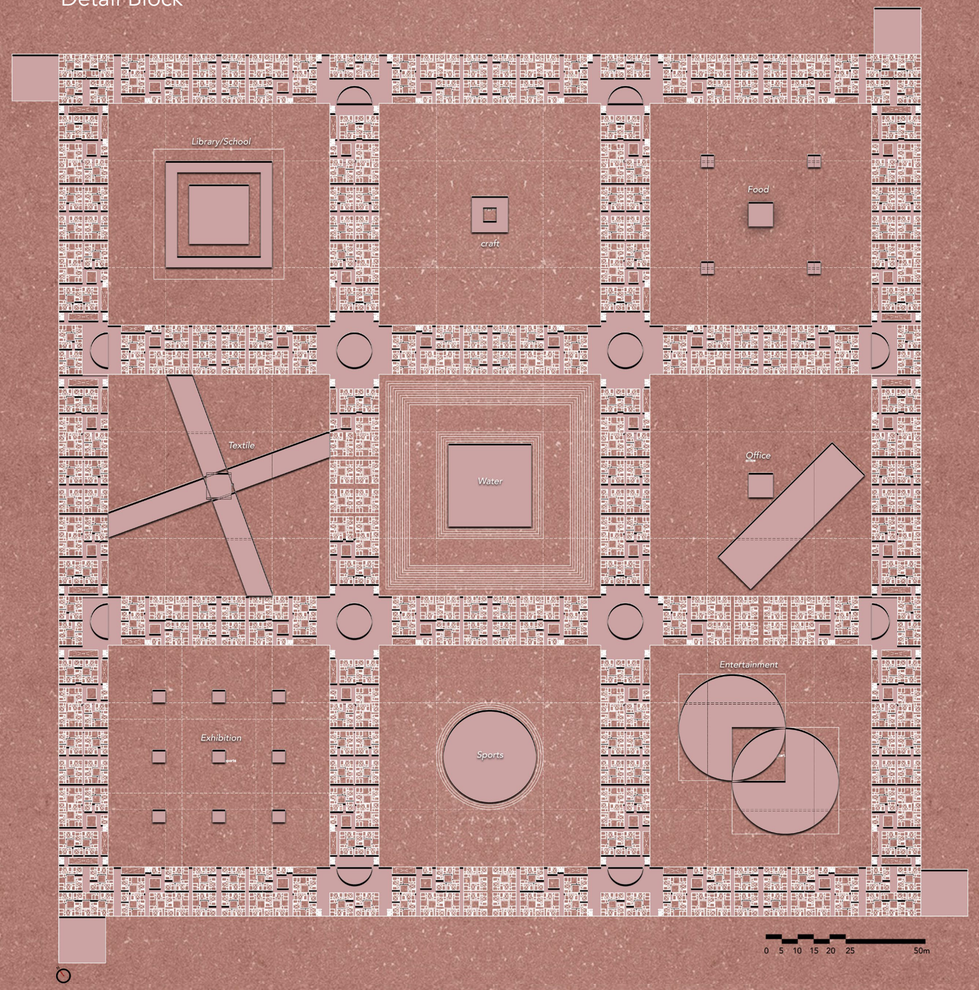


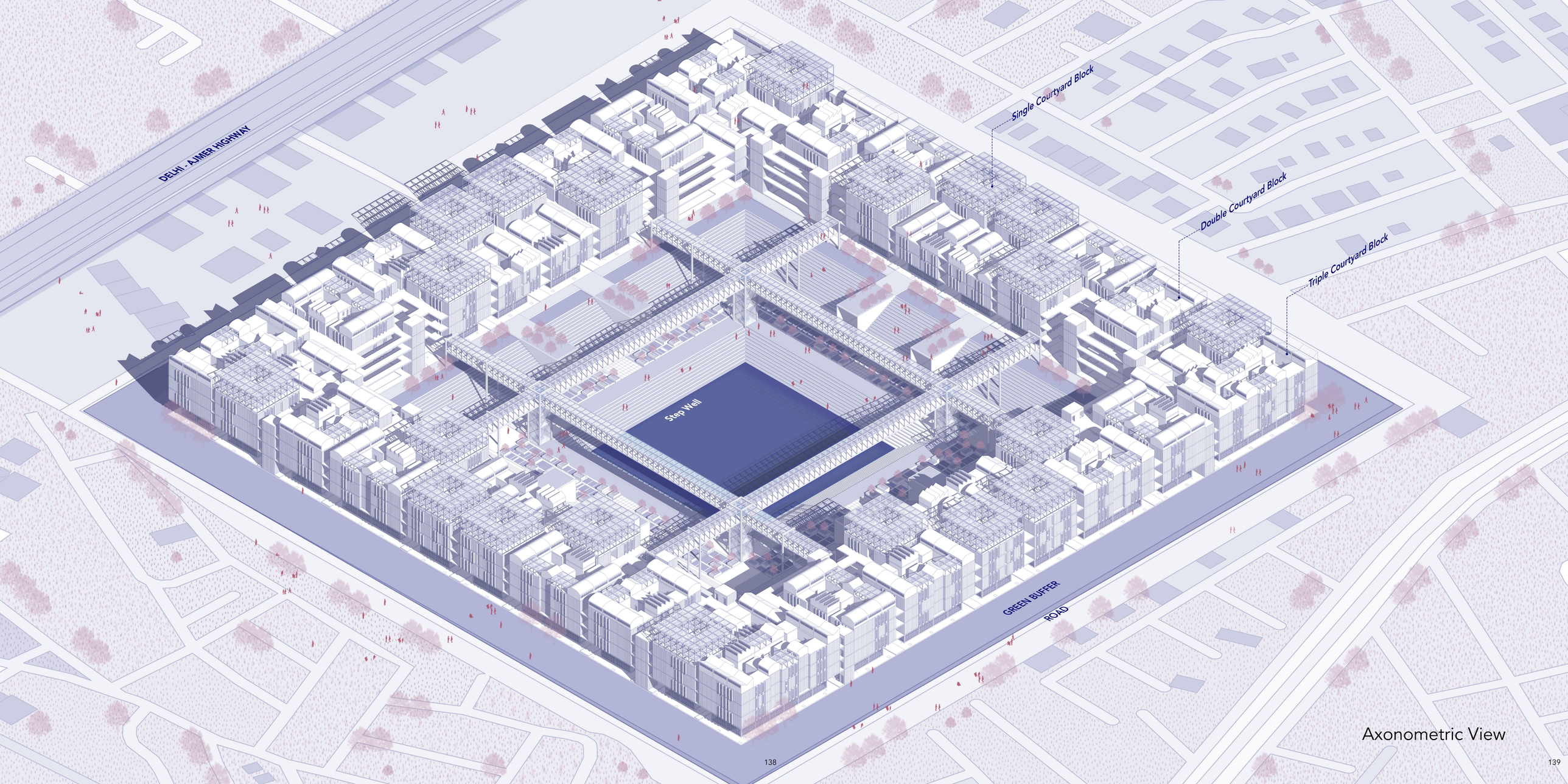


Conceptual Site Plan

Site Plan

Detail Block

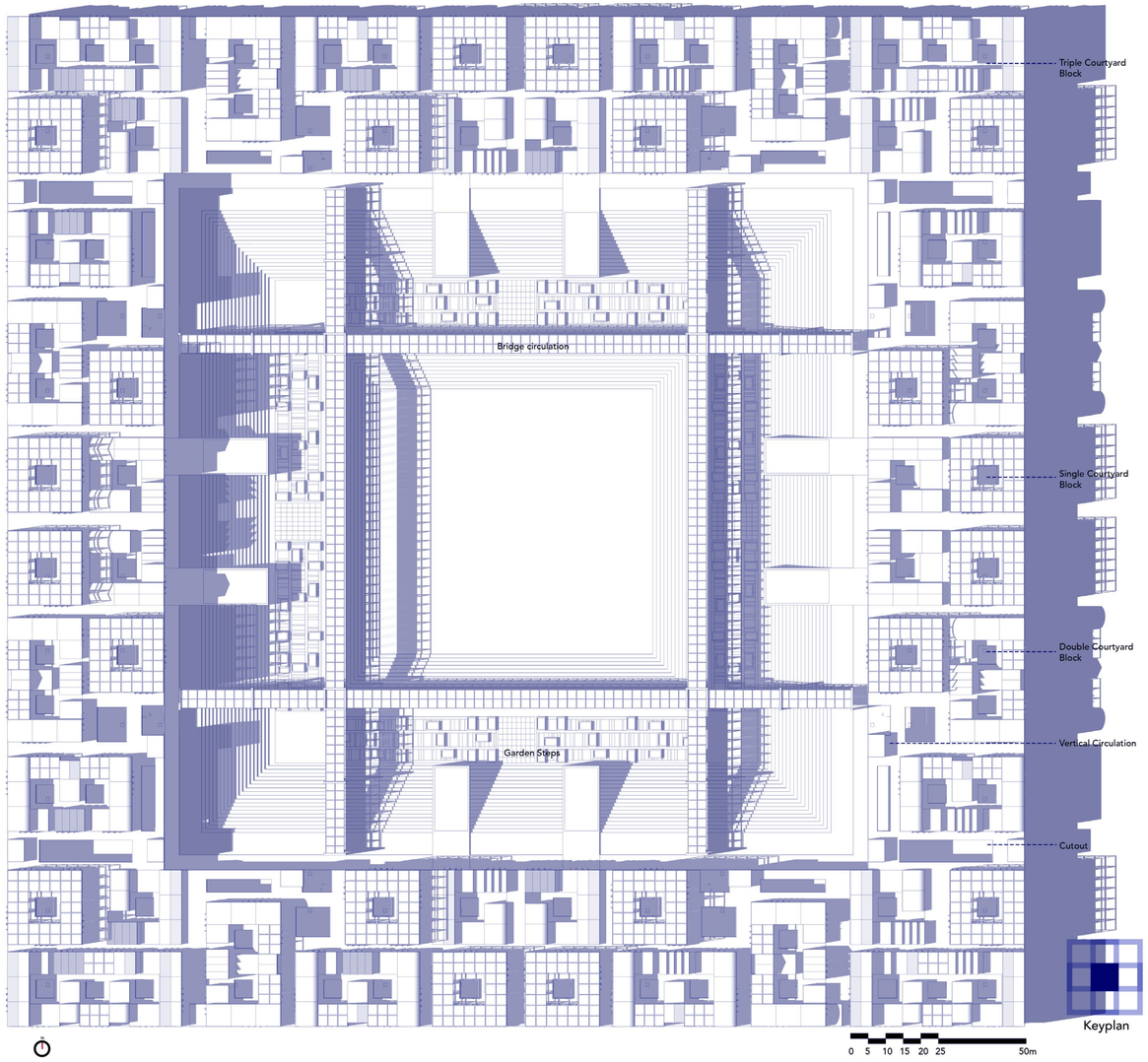




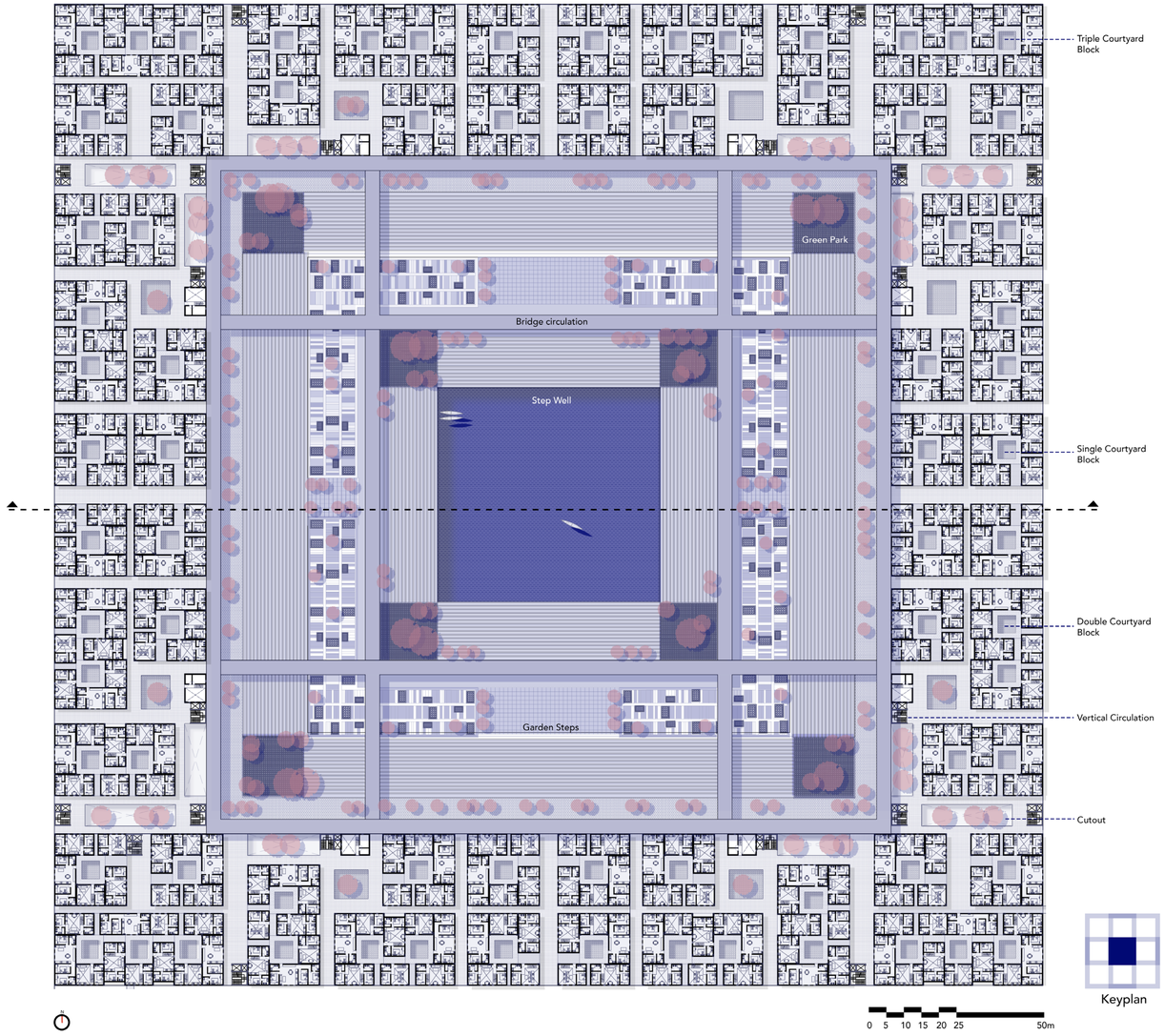
Axonometric View

View from the Central courtyard

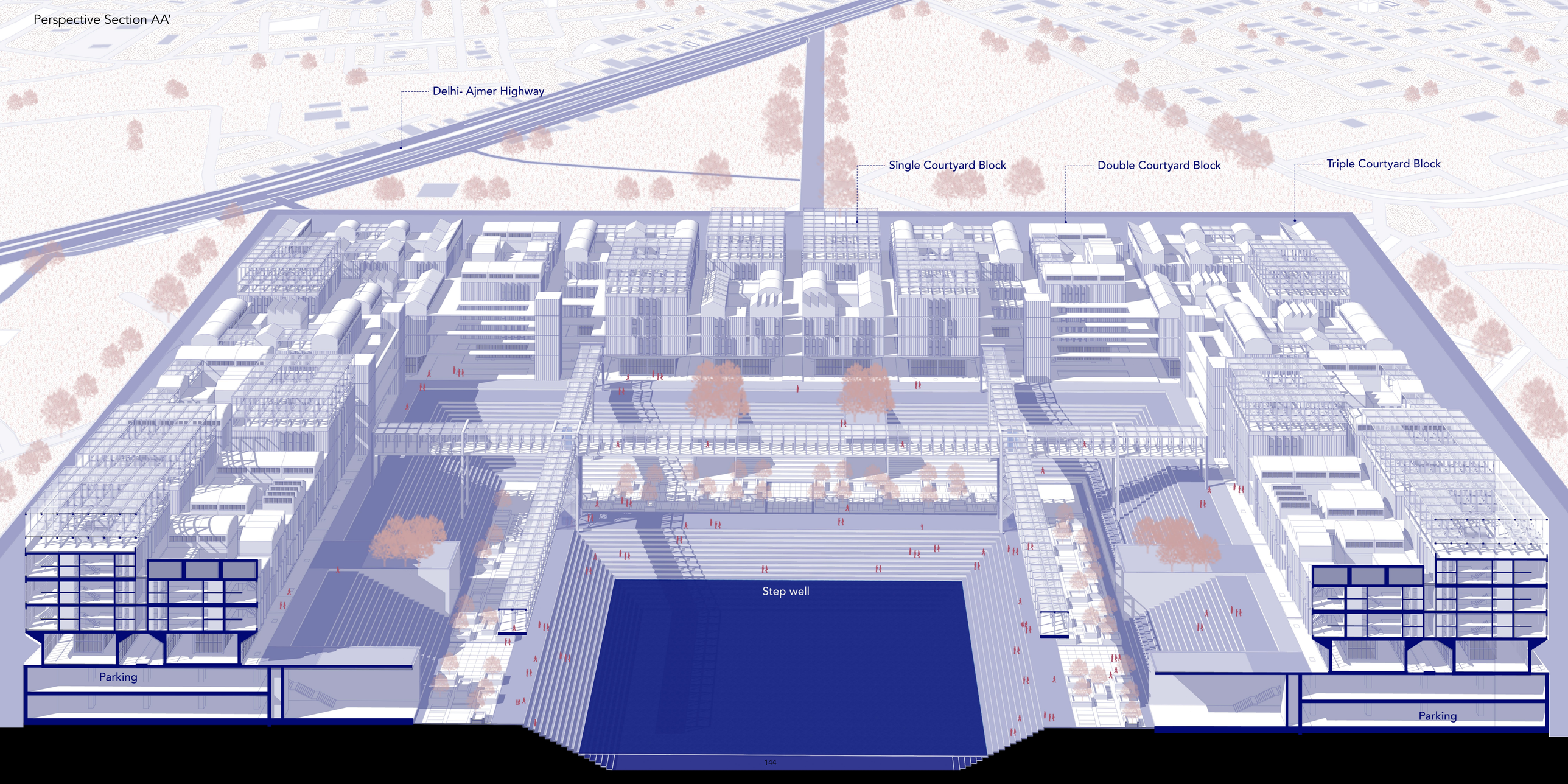
Detail Block 1



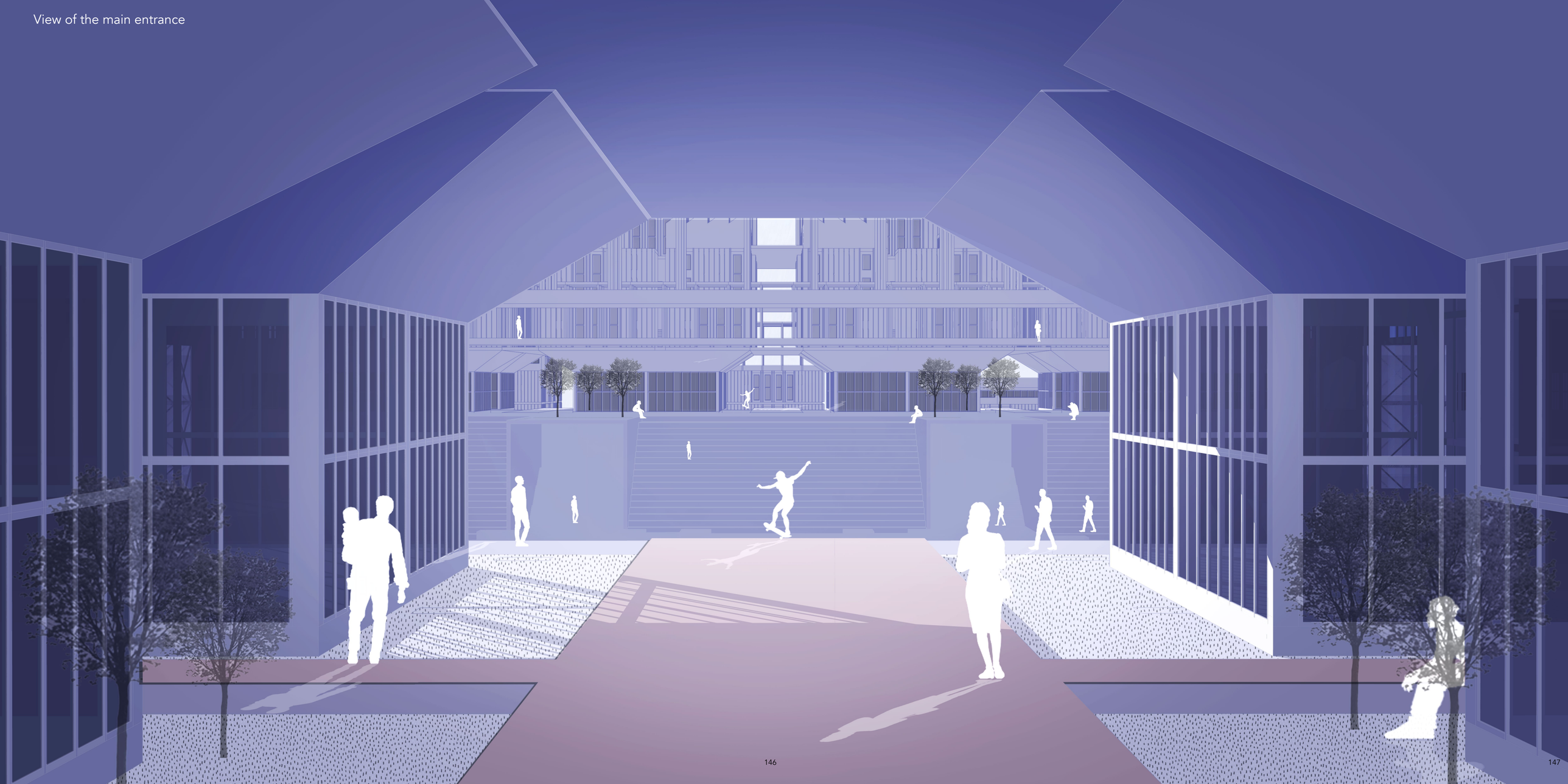
Detail Block 1



Perspective Section AA'



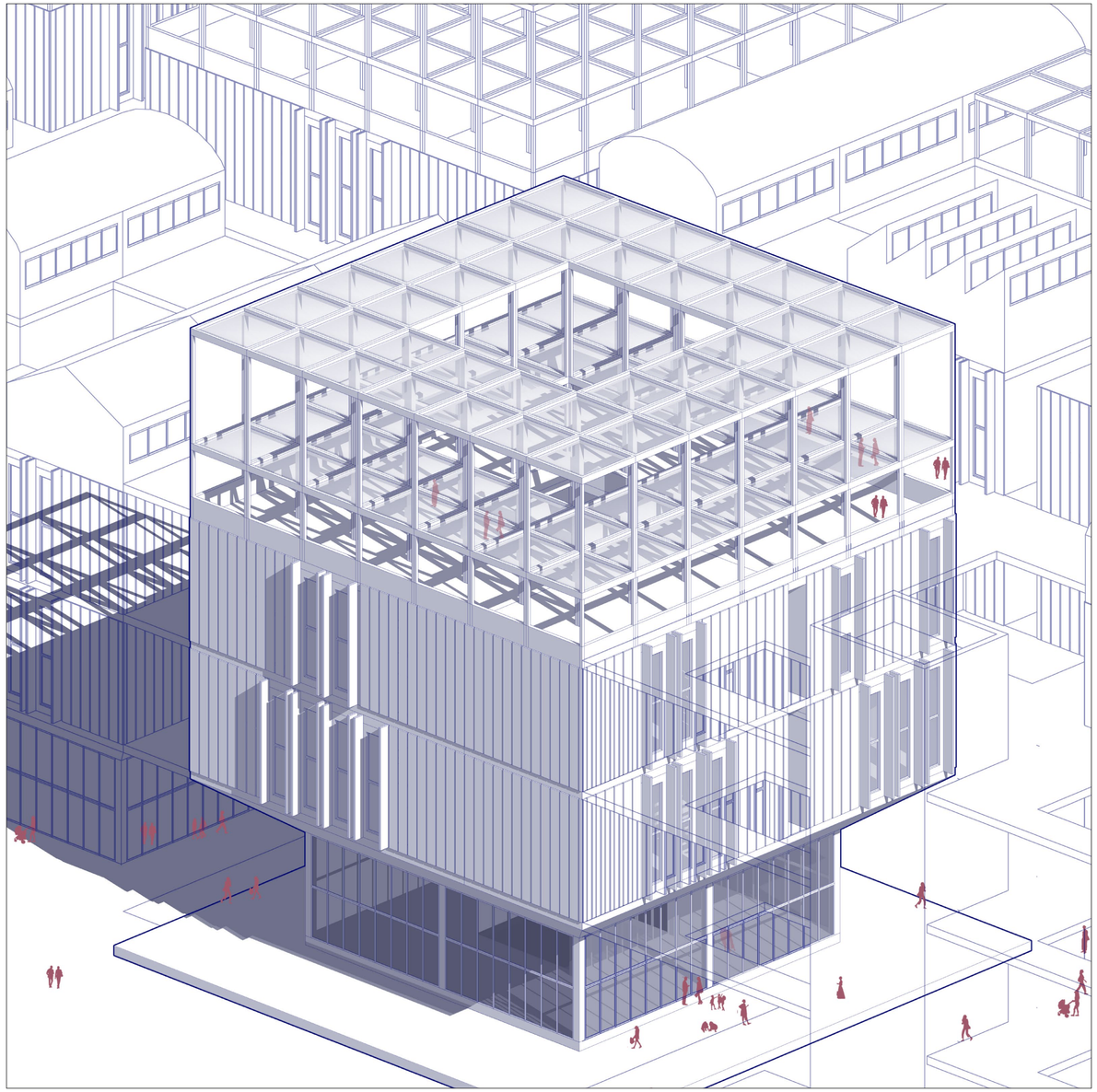
View of the main entrance

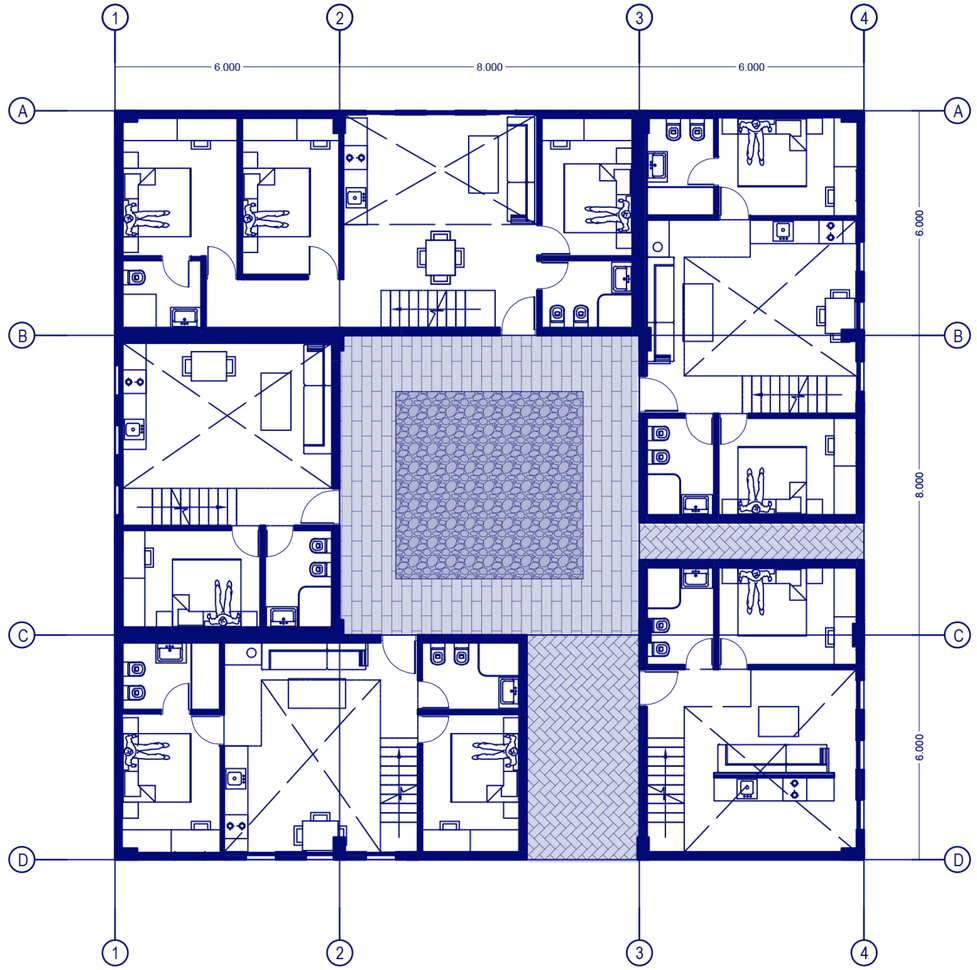


Detail Cluster

Cluster Like a city

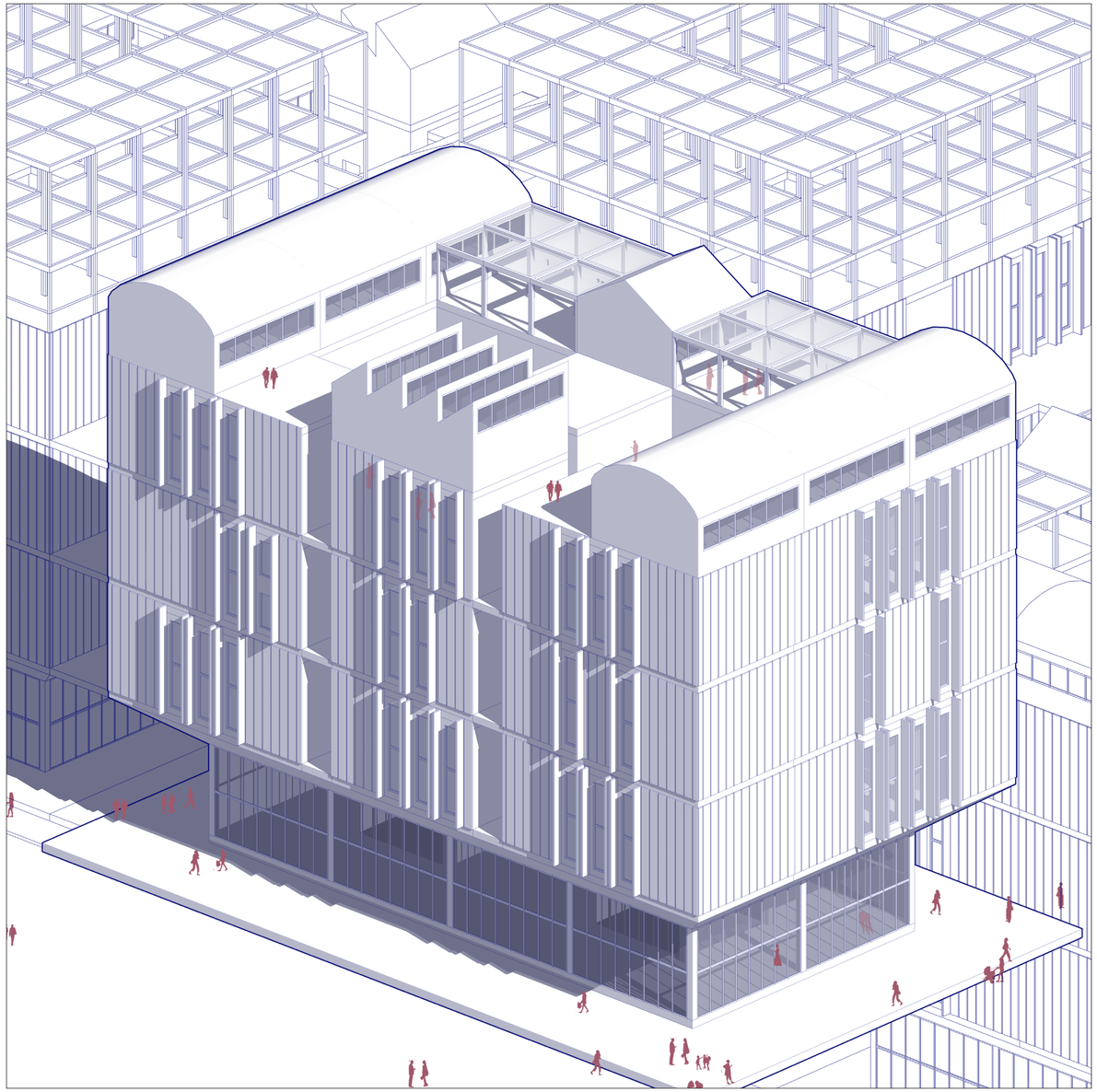
Axonometric View of Single Courtyard Block

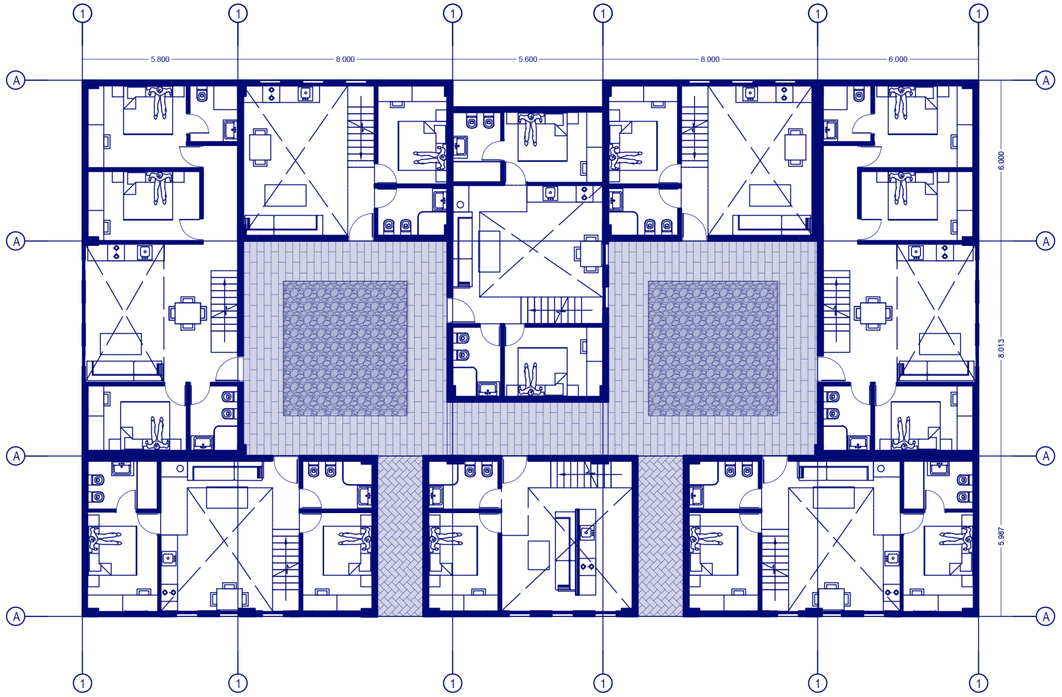




Single Courtyard Block

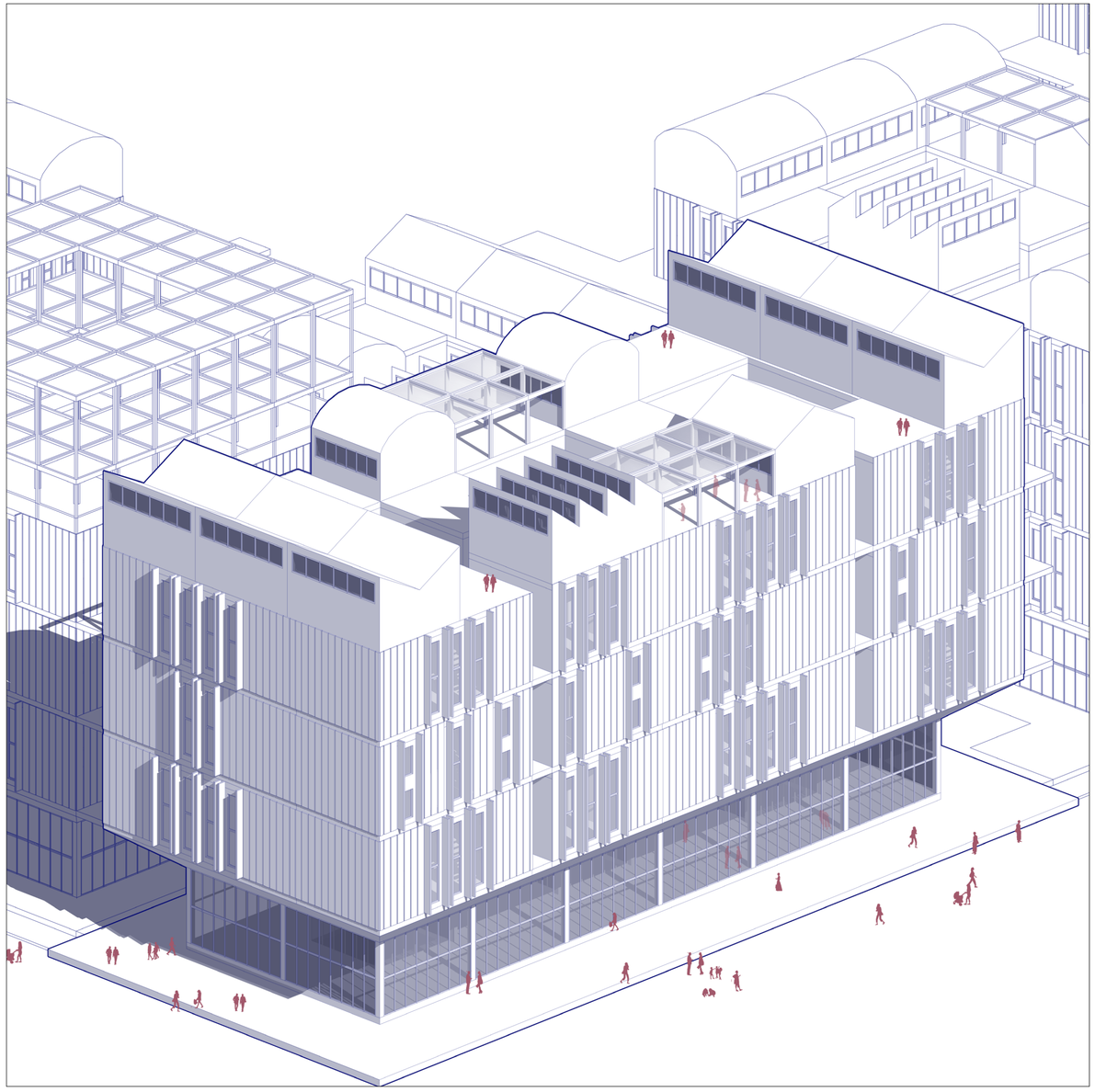
Axonometric View of Double Courtyard Block

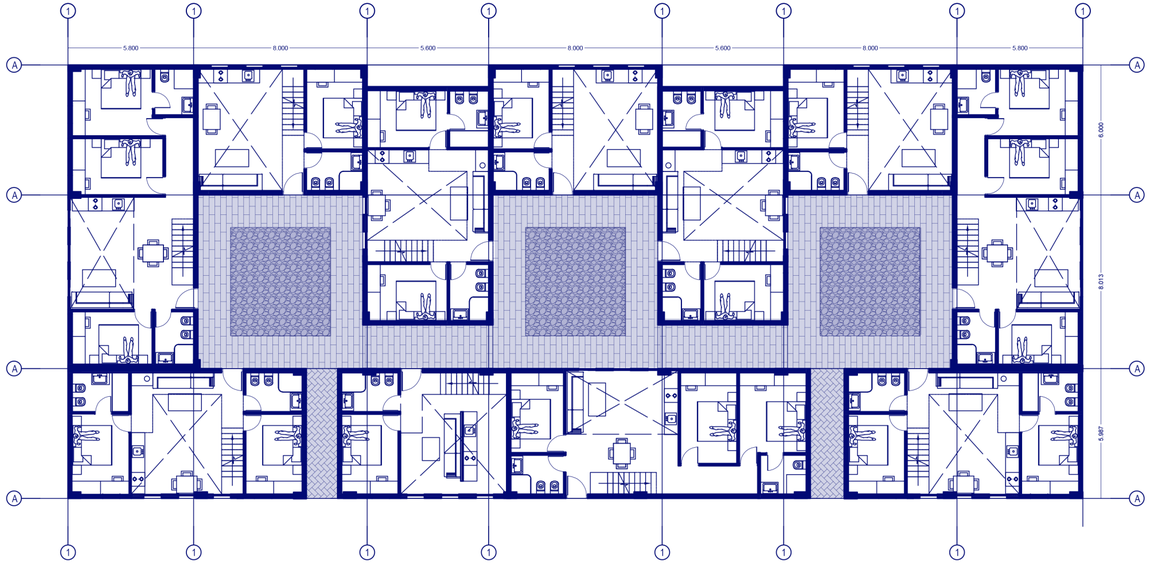




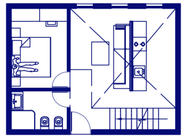
Double Courtyard Block

Axonometric View of Triple Courtyard Block

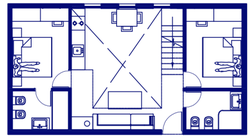




Triple Courtyard Block



Unit Type 1



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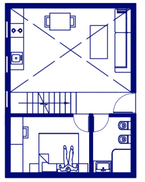

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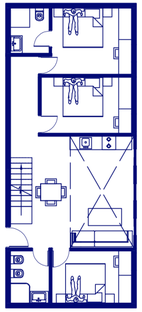
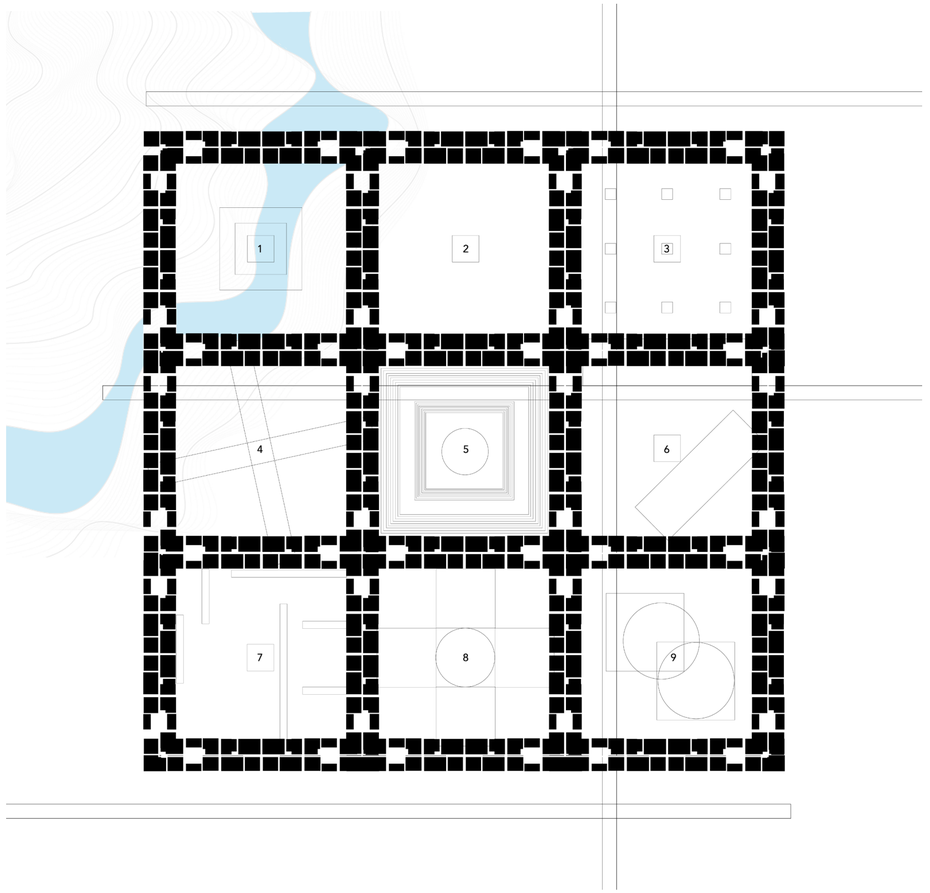


Unit Type 4

View from the bridge

CONCLUSION



CONCLUSION:

The title “Architectural Metamorphosis: A Comparative Exploration of Shapes in Architectural Evolution” encapsulates the essence of this research, which delves into the transformative changes and developments in architectural forms over time. Central to this exploration is the role of urban morphology in shaping architectural design. For instance, Le Corbusier’s design of the Venice Hospital was deeply informed by the unique morphology of Venice, while Charles Correa’s Jawahar Kala Kendra was a result of his comprehensive analysis of the city of Jaipur. These examples illustrate how an architect’s understanding of a city’s morphological characteristics can significantly influence and inspire architectural design.

This thesis has highlighted the transformative role of shapes in architectural history. By examining the evolution of architectural shapes influenced by modular construction, prefabrication systems, and innovative designs, this study has emphasized the critical need to reconceptualize urban spaces. The goal has been to enhance cities’ potential to generate diverse economic opportunities, products, and communities, thereby restoring their inherent adaptability in terms of productivity, public spaces, and civic democracy.

The research included an in-depth analysis of Le Corbusier and Jullian’s Venice Hospital project (1964) within the urban morphology of Venice, addressing two fundamental questions: (Q1) How does the urban morphology of Venice influence the configuration of this project? (Q2) What insights can the analytical discipline of space syntax offer to the study of architectural forms in Venice, extending beyond the evaluation of spatial functionality for social purposes?

A significant part of this research involved the exploration of the nine-square exercise, a pedagogical tool conceived by John Hejduk in 1954. This exercise has been instrumental in teaching architecture by illustrating how dividing space into nine equal parts and increasing their complexity can help students understand architectural elements and principles.

The nine-grid system, with its central arrangement reflecting stability and introversion, and its potential for radial organization indicating extroversion, demonstrates the organizational power of grids. These grids possess properties of repetition, expansion, and hierarchy, allowing for the creation of complex and dynamic spaces. Historically, this system has been used by renowned architects such as Le Corbusier, Andrea Palladio, and Louis Kahn, as well as contemporary architects like Shigeru Ban and Pezo Van.

Throughout history, significant architectural works have adhered to the nine-grid system. For example, Andrea Palladio’s Villa Rotunda developed the new era of Palladian architecture, demonstrating the nine-grid system’s extroverted nature and symmetry. Louis Kahn’s Exeter Academy Library utilized the hierarchical center of the nine-grid and chamfered corners. Additionally, the Jawahar Kala Kendra by Charles Correa, inspired by the city of Jaipur, and the Savannah city plan by James Edward both reflect the nine-grid system’s application in urban planning.

These examples underscore the universality and enduring relevance of the nine-grid system in architecture, transcending cultural and temporal boundaries.

In conclusion, this thesis has demonstrated the transformative role of shapes in architecture, showing how the nine-grid system has influenced architectural design across different eras and regions. The findings underscore the significance of this system in creating adaptable, functional, and aesthetically pleasing spaces, reinforcing the interconnectedness of architectural principles and urban morphology. Through this comparative exploration, the research contributes to a deeper understanding of architectural evolution and its ongoing impact on contemporary design practices.

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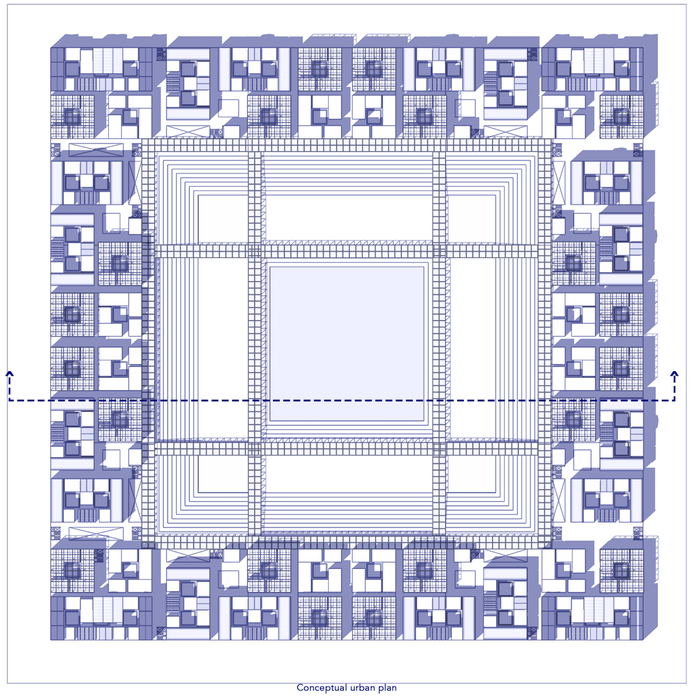
Thank You!



Conceptual urban plan