

JANAKI COMPLEX
(URBAN REDEVELOPMENT AND SECRETARIAT COMPLEX DESIGN)

A THESIS

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Architecture degree

By

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SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY) Accredited

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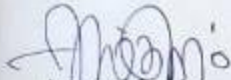
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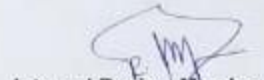
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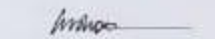
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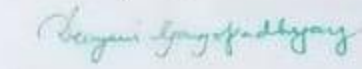
BONAFIDE CERTIFICATE

This is to certify that the Thesis Report is the bonafide work of **(ASHWINI SINGH (39210010))** who carried out the Thesis entitled "**Janaki Complex (Urban Redevelopment and Secretariat Complex Design)**" under our supervision from November 2023 to May 2024.

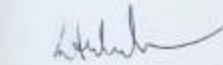

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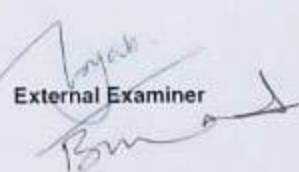

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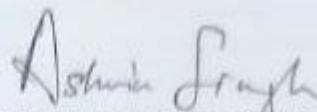

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DECLARATION

I, **ASHWINI SINGH** hereby declare that the Thesis Report entitled "Janaki complex (Urban Redevelopment and secretariat complex design) " done by me under the guidance of **Ramkumar SSR** (Internal Guide), **Ar.Surya Rajkumar** (Internal Review Member) and **Ar.Eleshore Panikar** (External Guide) Sathyabama Institute of Science and Technology is submitted in partial fulfillment of the requirements for the award of Bachelor of Architecture Degree.

DATE: 24-05-2024

PLACE: Chennai



SIGNATURE OF THE CANDIDATE

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I convey my thanks to **Dr. Devyani Gangopadhyay**, Dean and Head of the Department, School of Building and Environment, Our Design Chair **Ar. Sarath C Kanth**, Thesis Coordinator **Ar. Mohana Gopiraj** for providing me necessary support and details at the right time during the progressive reviews.

I would like to express my sincere and deep sense of gratitude to my Thesis Internal guide **Ramkumar SSSR**, Internal Review member **Ar. Surya Rajkumar** and External Guide **Ar. Kishore Panikar** their guidance, suggestions, and constant encouragement paved the way for the successful completion of my Thesis work.

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ASHWINI SINGH

THESIS SYNOPSIS

This thesis delves into the architectural heritage of Patliputra, present-day Patna, and addresses the significant loss of this heritage due to modern development, overpopulation, and unplanned urban growth. The project aims to design a modern secretariat complex that captures the historical essence of the city while meeting contemporary functional requirements. Spanning 400 acres, the project includes the creation of a central vista for the legislative assembly and the development of a new assembly building inspired by Patliputra's ancient architecture.

The design harmoniously blends traditional architectural elements with modern construction techniques to create a user-friendly and aesthetically pleasing environment. The central vista serves as a landscaped avenue that links the various buildings within the complex, fostering public interaction and enhancing the visual and functional cohesion of the site. The project prioritizes sustainability by incorporating green building practices to minimize environmental impact.

This thesis aspires to restore a sense of historical continuity in Patna's urban fabric by integrating historical design elements with modern architectural practices. The resulting complex is envisioned as a functional and symbolic civic space that honors Patliputra's rich heritage while addressing the demands of a modern administrative center.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Patna, historically known as Patliputra, boasts a rich architectural legacy that has been significantly eroded by modern development, overpopulation, and unplanned urban growth. This thesis, seeks to address this erosion by designing a modern secretariat complex that draws inspiration from the city's ancient architectural heritage. The project aims to reconnect Patna with its historical roots while fulfilling the functional needs of a contemporary administrative complex.

1.2 NEED OF THE PROJECT

The rapid and unplanned growth of Patna has led to the deterioration and loss of its historical architecture, leaving the city with little to reflect its rich cultural and historical past. There is an urgent need to preserve and revive this heritage to maintain the city's unique identity. Additionally, the current administrative infrastructure is inadequate to meet the demands of modern governance. Therefore, there is a critical need for a new secretariat complex that not only provides state-of-the-art facilities but also embodies the historical essence of Patliputra.

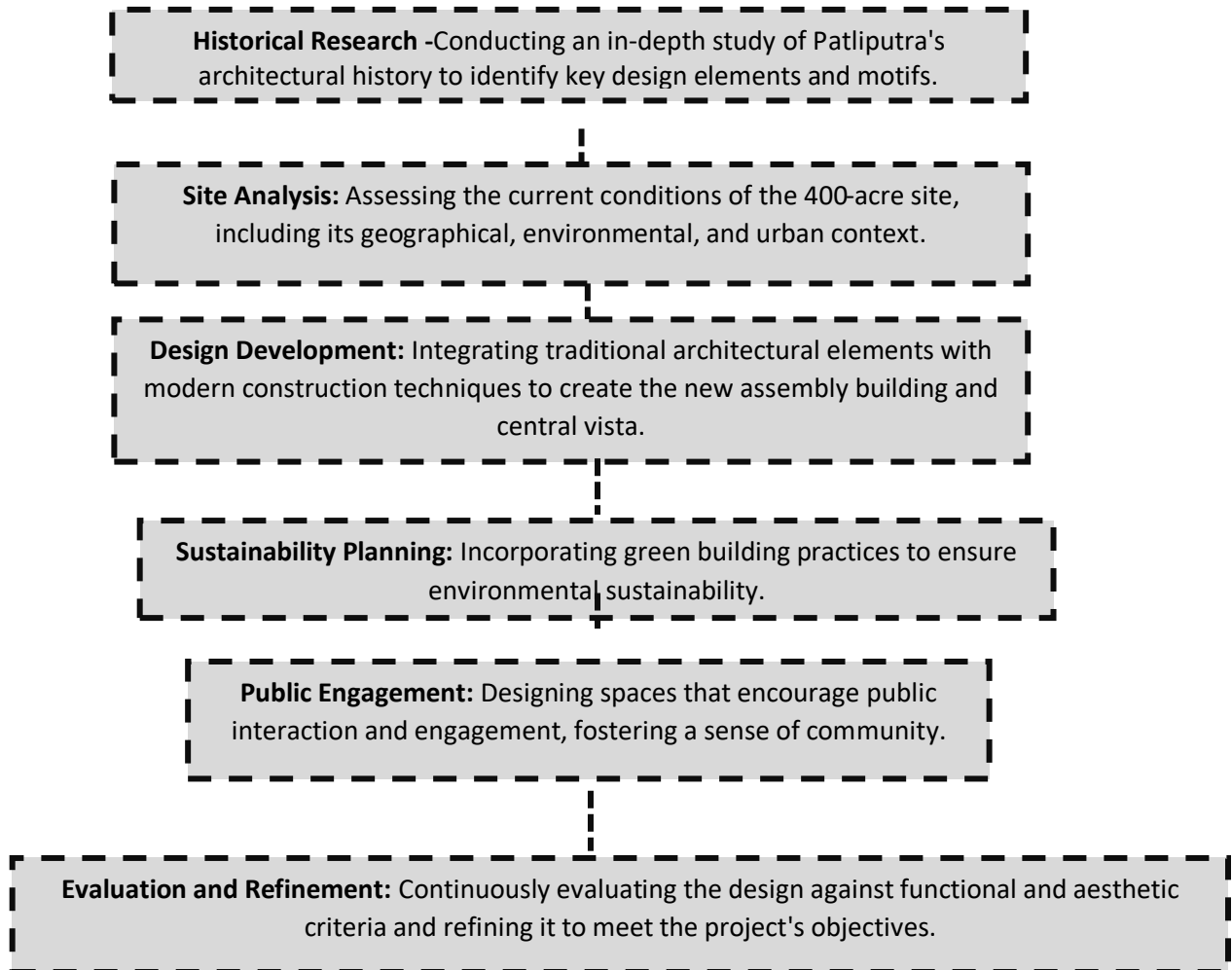
1.3 AIM AND OBJECTIVE

The primary aim of this project is to design a modern secretariat complex that integrates historical architectural elements of Patliputra with contemporary design principles. The objectives include:

1. Redeveloping a 400-acre site to create a central vista for the legislative assembly.
2. Designing a new assembly building inspired by the city's ancient architecture.
3. Creating a user-friendly, sustainable, and aesthetically pleasing environment.
4. Enhancing public engagement and fostering a sense of historical continuity in the urban fabric of Patna.

1.4 METHODOLOGY

The methodology for this project involves several key steps:



This comprehensive approach ensures that the final design not only serves the functional needs of the city's administration but also revives and celebrates the rich architectural heritage of Patliputra.

CHAPTER 2

LITERATURE CASE STUDIES

2.1 STATE ADMINISTRATION

Bihar's state administration boasts a rich and diverse history that reflects its position as one of India's oldest and culturally significant regions. Historically, Bihar has been a cradle of civilization, with evidence of ancient urban centers like Pataliputra, the capital of several ancient Indian empires. The Maurya and Gupta dynasties, in particular, left indelible marks on Bihar's administrative landscape, showcasing advanced governance systems and urban planning principles.

During the colonial era, Bihar was part of the British Indian administration, witnessing significant socio-political changes and movements for independence. Post-independence, Bihar continued to evolve administratively, with the establishment of the modern state of Bihar on November 15, 2000, following the bifurcation of the original state into Bihar and Jharkhand.

The state administration of Bihar follows a hierarchical structure, with the Chief Minister serving as the head of the government and the Governor as the constitutional head. The Chief Minister, supported by the Council of Ministers, holds executive authority and is responsible for governance and policy implementation across various sectors.

The administrative machinery of Bihar is divided into different departments, each headed by a Secretary or Principal Secretary, who oversees the functioning of the department and reports to the Chief Secretary, the highest-ranking civil servant in the state. The Chief Secretary acts as the principal advisor to the Chief Minister and coordinates the activities of various departments.

At the district level, administration is overseen by District Magistrates (DMs) or Deputy Commissioners (DCs), who are responsible for maintaining law and order, implementing government schemes, and coordinating with various departments. Additionally, Bihar is divided into divisions and subdivisions, each headed by Divisional Commissioners and Subdivisional Officers, respectively, to ensure efficient administration and delivery of services at the grassroots level.

In recent years, Bihar has witnessed significant developments in its administrative framework, including efforts to streamline bureaucracy, enhance transparency and accountability, and improve service delivery through digital initiatives and e-governance platforms. Despite facing challenges such as poverty, unemployment, and infrastructure deficits, Bihar's state administration remains committed to fostering inclusive growth and development, ensuring the welfare and prosperity of its citizens.

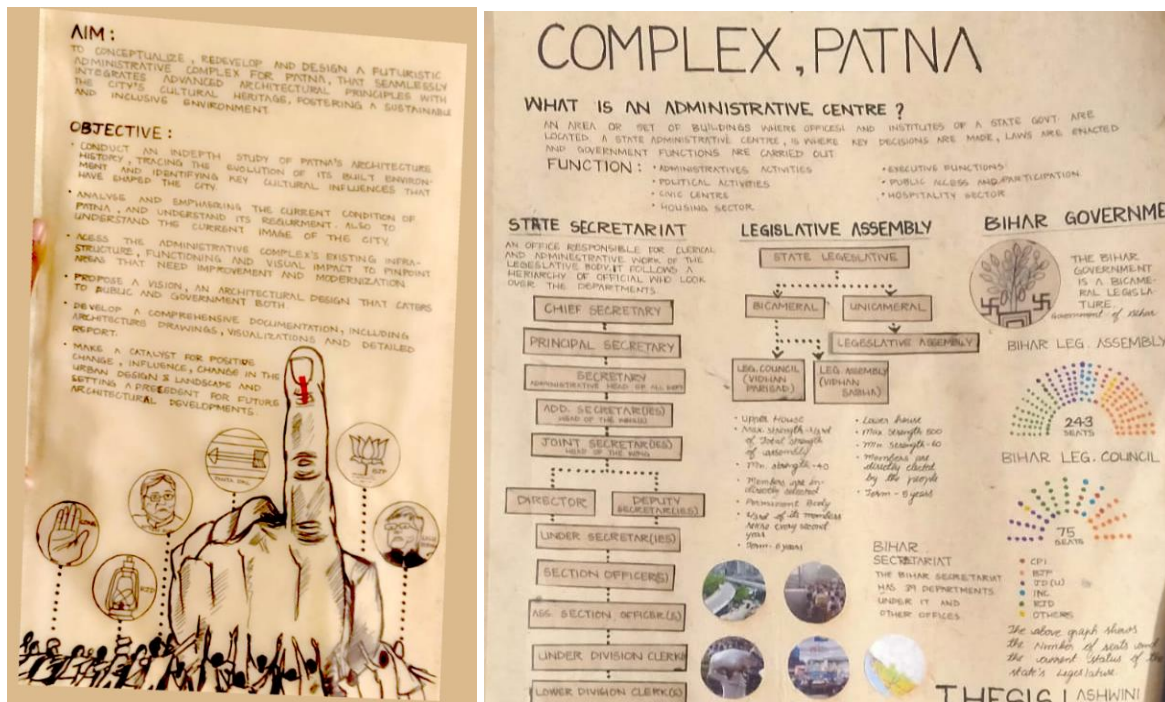


Fig 2.1 state Administration

2.2 PATNA SHEHAR

Patna Shehar, often simply referred to as Patna, is the capital and largest city of the Indian state of Bihar. Situated on the southern bank of the Ganges River, Patna is one of the oldest continuously inhabited cities in the world, with a history that dates back over two millennia. Historically known as Pataliputra, it served as the capital of several ancient Indian empires, including the Maurya and Gupta dynasties, making it a significant political, cultural, and economic center.

Today, Patna is a bustling metropolis and a major hub for trade, education, and

administration in the region. The city has witnessed rapid urbanization and development in recent years, with modern infrastructure, commercial establishments, and educational institutions contributing to its growth. Patna is renowned for its rich cultural heritage, with landmarks such as the Golghar, Patna Museum, and Mahavir Mandir attracting tourists and history enthusiasts from around the world.

As the capital city of Bihar, Patna plays a crucial role in the state's governance and administration. It is home to the Bihar Legislative Assembly, the state secretariat, and numerous government offices and institutions. The city's strategic location and connectivity via road, rail, and air make it a vital transportation hub, facilitating trade and commerce within the state and beyond.

Despite its urban sprawl and modernization, Patna retains its historical charm and cultural vibrancy, with bustling markets, vibrant festivals, and a diverse population adding to its unique character. The city's culinary scene, featuring traditional Bihari cuisine alongside international flavors, reflects its cosmopolitan ethos.

While Patna faces challenges such as traffic congestion, pollution, and infrastructure deficits, efforts are underway to address these issues and promote sustainable development. With its blend of ancient heritage and modern aspirations, Patna continues to be a dynamic and evolving city, poised for growth and prosperity in the 21st century.

principle of projection via lenses benefits from qualitative and quantitative advantages compared to conventional reflector solutions. Often the arrangements can be staggered.

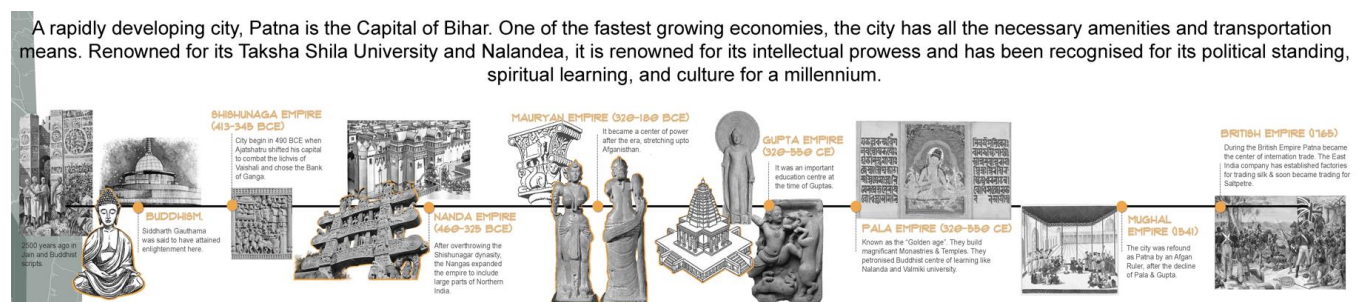


Fig 2.2.1 Time line of Patna

FROM PATLIPUTRA TO PATNA

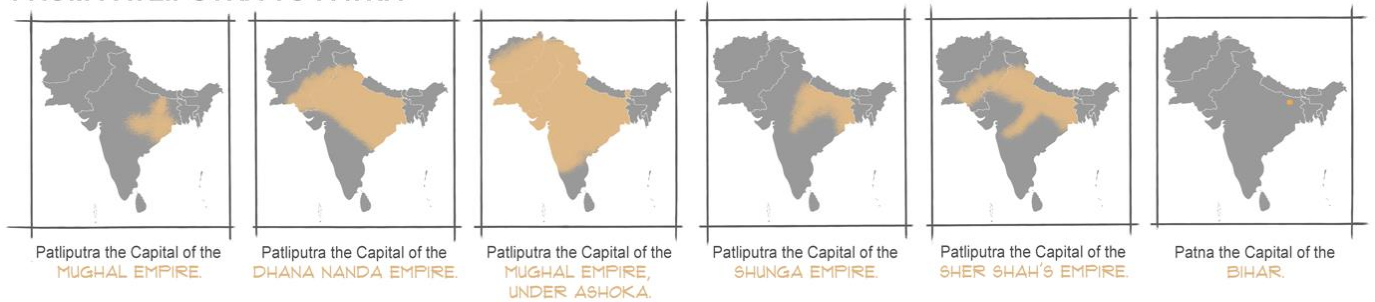


Fig 2.2.2 patliputra capitals

CURRENT PATNA SHEHAR

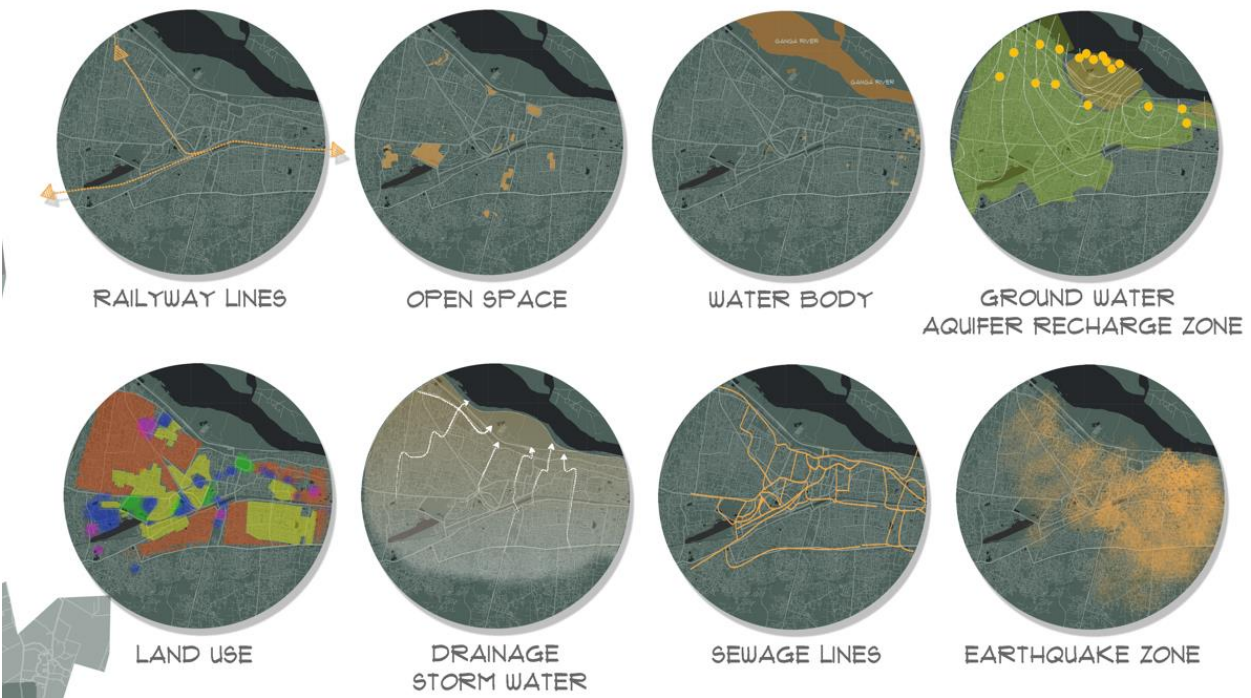


Fig 2.2.3 current infrastructure of the city

Patna has experienced a significant growth pattern over the years, driven by various factors such as urbanization, industrialization, and population influx. Here are some key aspects of Patna's growth pattern:

1. **Urban Expansion:** Patna has witnessed extensive urban expansion, with the city's boundaries expanding rapidly to accommodate the growing population and infrastructure needs. New residential, commercial, and industrial areas have emerged on the outskirts of the city, contributing to its spatial growth.
2. **Population Growth:** *The city's population has been steadily increasing, fueled by factors such as natural population growth, rural-to-urban migration, and

employment opportunities in various sectors. This population influx has put pressure on urban services and infrastructure, leading to challenges related to housing, transportation, and public utilities.

3. **Infrastructure Development:** In response to the growing demands of urbanization, Patna has seen significant infrastructure development in recent years. This includes the construction of new roads, bridges, flyovers, and public transportation systems to improve connectivity within the city and enhance mobility for residents.
4. **Commercial and Industrial Growth:** Patna has emerged as a major commercial and industrial hub in the region, attracting investments across various sectors such as manufacturing, IT, healthcare, and education. The establishment of industrial parks, special economic zones (SEZs), and business districts has stimulated economic growth and employment opportunities.
5. **Real Estate Boom:** The demand for residential and commercial real estate has surged in Patna, leading to a boom in the construction sector. High-rise apartments, shopping complexes, office towers, and gated communities have become prominent features of the city's skyline, catering to the diverse needs of its growing population.
6. **Infrastructure Challenges:** Despite rapid growth and development, Patna faces infrastructure challenges such as traffic congestion, inadequate sewage systems, water scarcity, and environmental pollution. Addressing these challenges requires comprehensive urban planning, sustainable development strategies, and investment in critical infrastructure projects.
7. **Future Prospects:** As Patna continues to grow and evolve, there are opportunities for the city to leverage its strengths and address its challenges. Sustainable urban planning, smart city initiatives, investment in green infrastructure, and the promotion of inclusive growth can contribute to the city's long-term prosperity and resilience in the face of urbanization pressures.

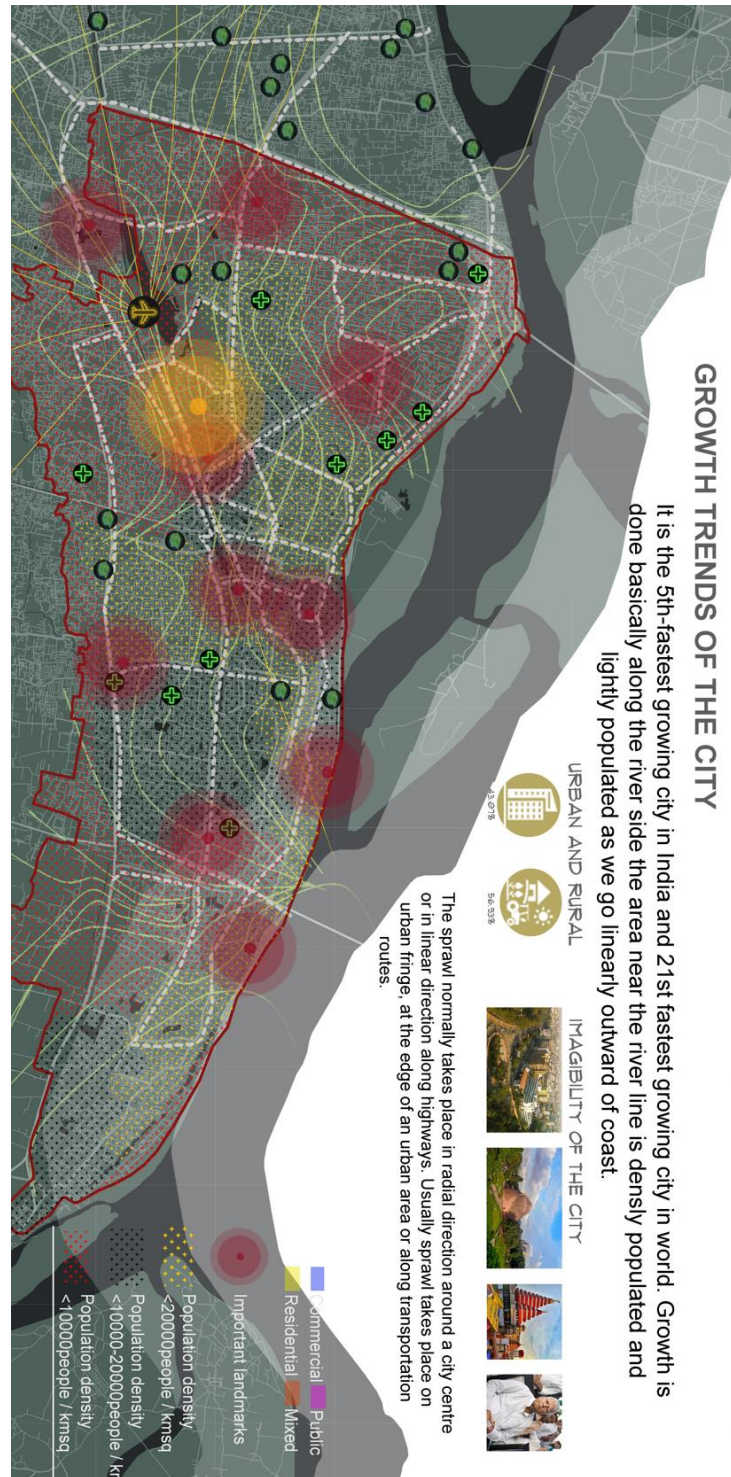
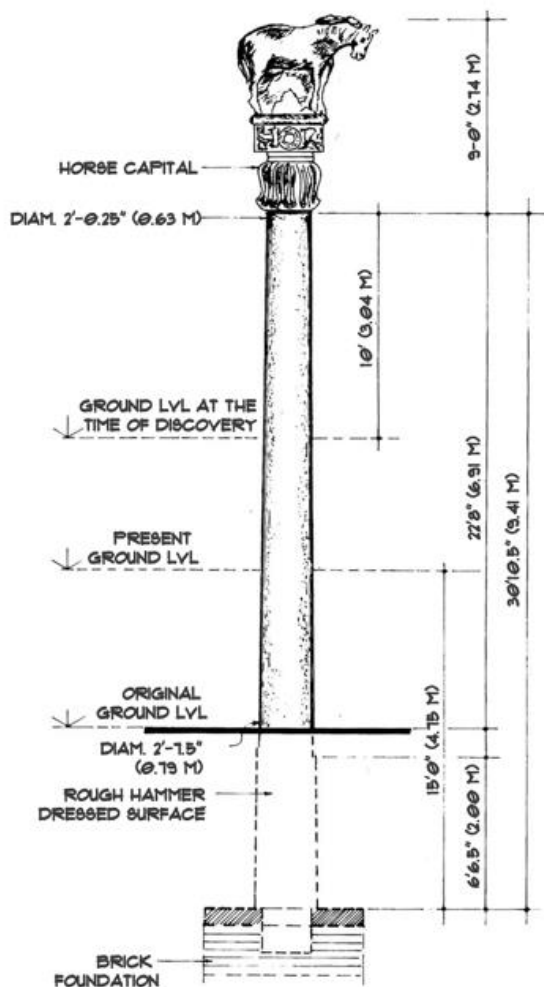


Fig 2.2.4 city map and growth pattern

2.3 ARCHITECTURAL HERITAGE

Ancient Marvels:

Patna, formerly known as Pataliputra, boasts a storied history dating back to the 5th century BCE when it served as the capital of the Maurya Empire. The remnants of this ancient past are evident in landmarks such as the Kumhrar excavation site, believed to be the remains of the Mauryan palace. Excavations have unearthed pillared halls, water channels, and other architectural marvels, providing a glimpse into the grandeur of ancient Pataliputra.

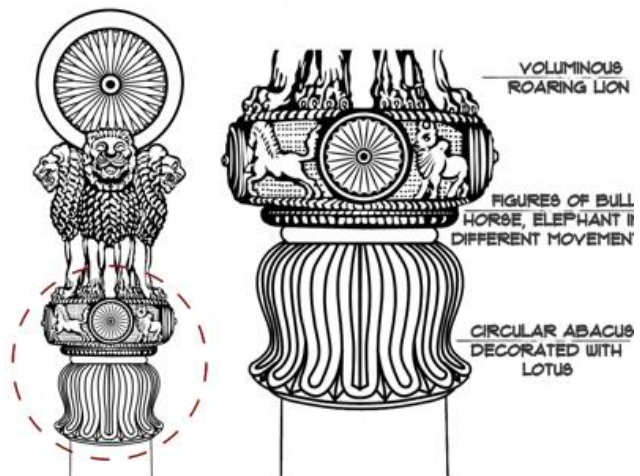


MAURYAN PILLARS

During the Ashoka reign, many pillars were erected with capital figures carved in them.



ROCK-CUT PATLIPUTRA CAPITALS



LION CAPITAL, SARNATH

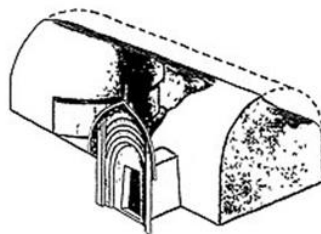
which is also our National Emblem

Fig 2.3.1 Mauryan architect elements



Fig 2.3.2 Mauryan stone capitals

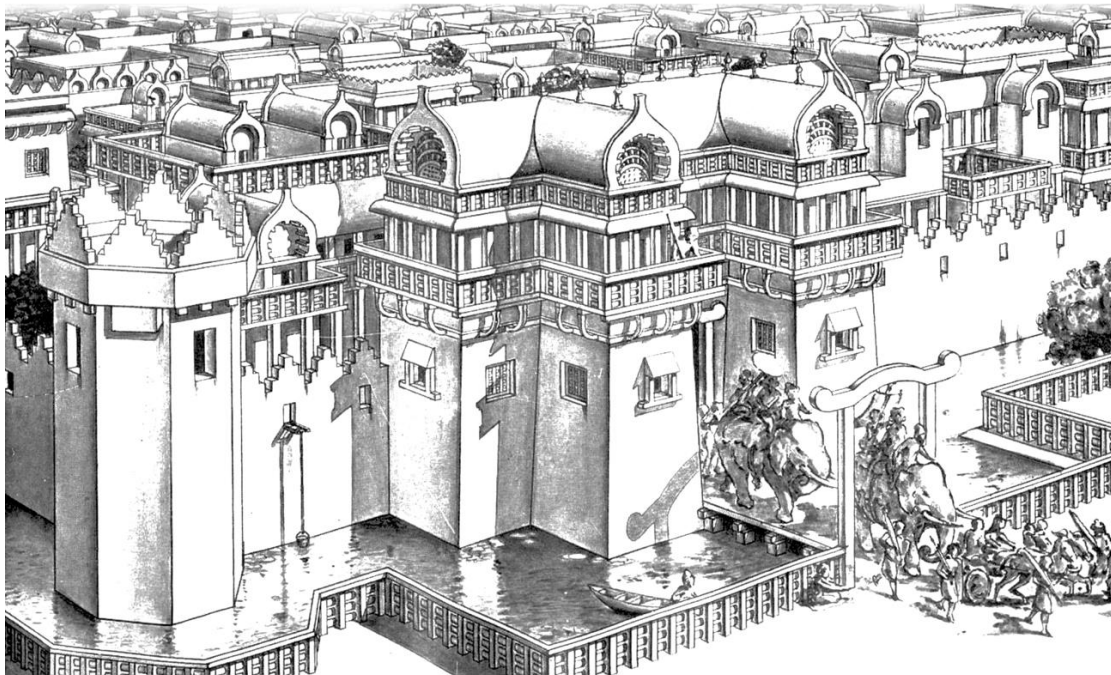
ROCK - CUT CAVES



BARABAR CAVES

Mauryans made a remarkable contribution to art and architecture, and introduced stone masonry on a wide scale.

Fig 2.3.3 Mauryan stone caves



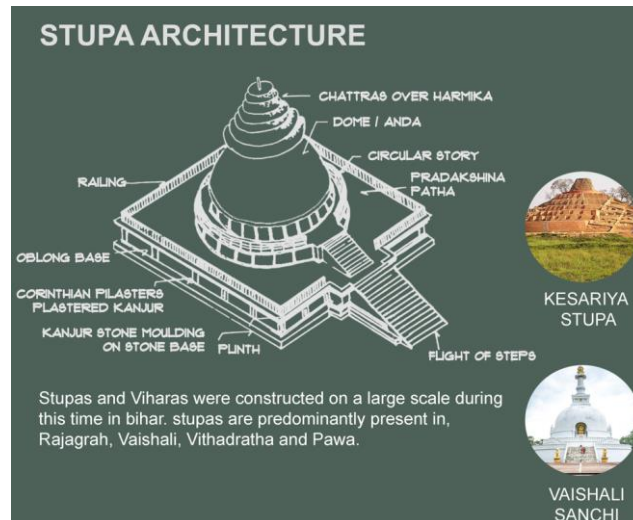
Conjectural reconstruction of the Main Gateway to the ancient city of Kaninagara (cir. B.C. 100) in Magadha (Bihar). Adapted from a bas-relief on the Southern Gateway of the Great Stupa at Sanchi, Bhopal State

Fig

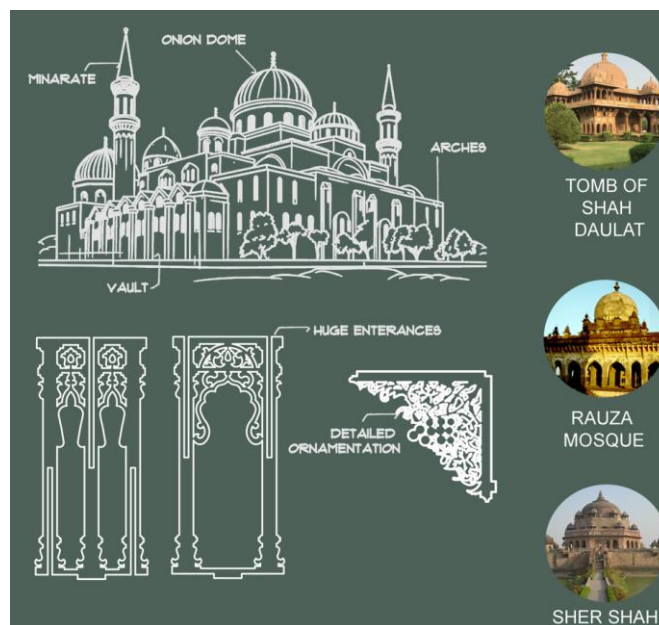
2.3.3 Mauryan era city scape

Medieval Splendor:

The medieval period saw Patna's architectural landscape evolve under the influence of various dynasties, including the Gupta, Pala, and Mughal dynasties. Temples, mosques, forts, and other structures dotted the city, reflecting the cultural and religious diversity of the region. Notable landmarks from this era include the revered Mahavir Mandir, dedicated to Lord Hanuman, and the historic Gurdwara Patna Sahib, commemorating the birthplace of Guru Gobind Singh.



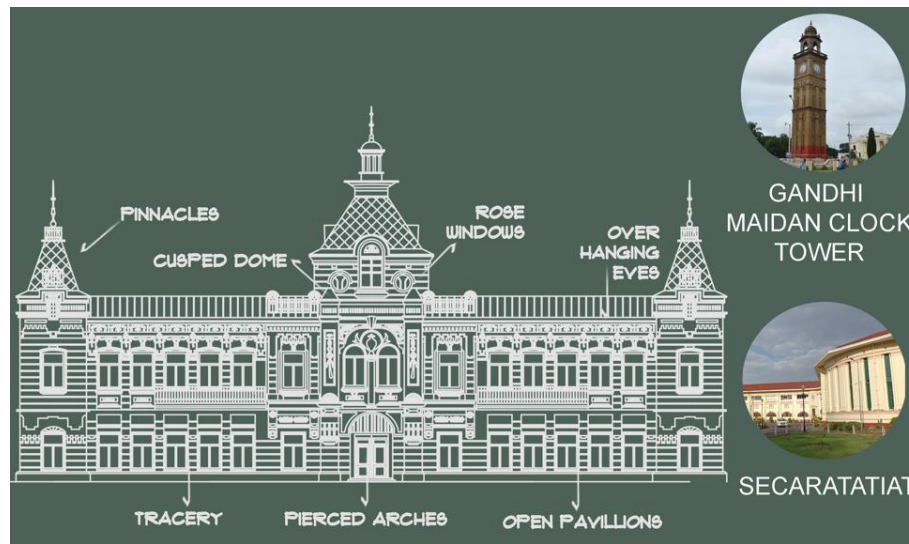
2.3.4 stupa architecture



2.3.5 mughal era architecture

Colonial Legacy:

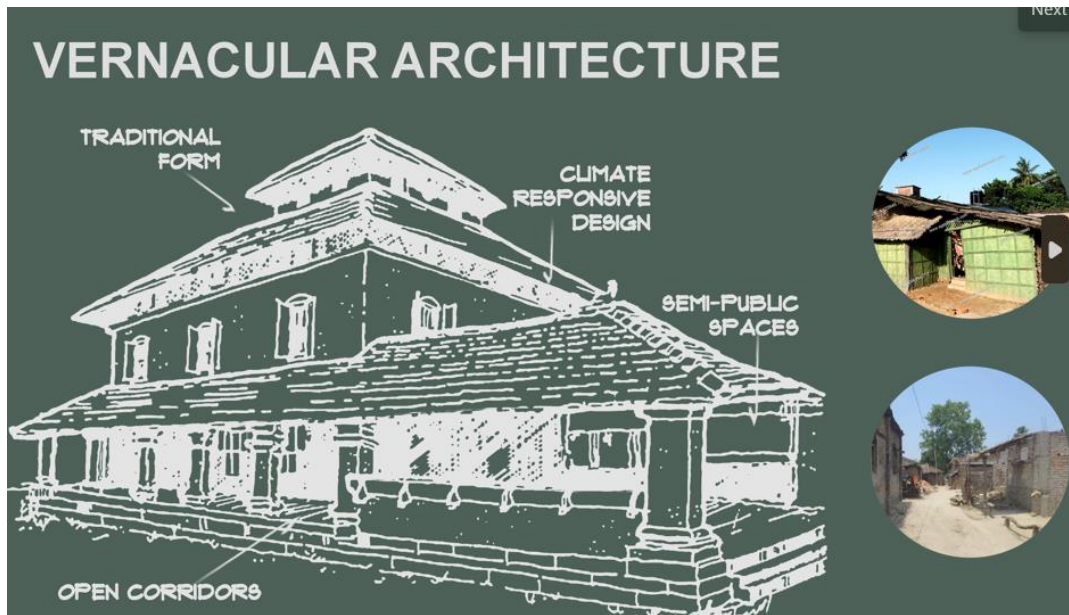
The colonial era left an indelible mark on Patna's architecture, with the British introducing colonial-style buildings, churches, and educational institutions to the city. The iconic Golghar, a granary built by the British in the 18th century, stands as a testament to this period. Its unique beehive-like architecture and panoramic views make it a cherished landmark of Patna.



2.3.6 british era architecture

Modern Developments:

In recent decades, Patna has witnessed rapid urbanization and modern development, leading to the construction of high-rise buildings, shopping complexes, and residential colonies. While these developments signify progress, efforts are underway to preserve and promote the city's rich architectural heritage. Institutions such as the Patna Museum showcase a diverse collection of sculptures, artifacts, and manuscripts, providing valuable insights into the city's cultural legacy.



2.3.7 british era architecture

Patna's architectural heritage is a tapestry woven with threads of ancient marvels, medieval splendor, colonial legacy, and modern developments. From the grandeur of ancient Pataliputra to the colonial-era landmarks and contemporary structures, the city's architecture narrates a compelling story of its rich and diverse past. As Patna continues to evolve, preserving and celebrating its architectural heritage remains essential in maintaining its cultural identity and fostering a sense of pride among its residents.

CHAPTER 3

PATLI PUTRA TO PATNA

3.1 THE TRANSITION

Patna, once the seat of ancient empires and a center of culture and learning, has undergone a remarkable transition from its storied past to the bustling metropolis it is today. The city's journey from Pataliputra, the grand capital of the Mauryan Empire, to modern-day Patna reflects centuries of change, growth, and adaptation. Over time, Patna has witnessed the rise and fall of dynasties, the influence of colonial rule, and the challenges of post-independence development. This transition is evident in the city's architectural landscape, which blends ancient monuments, medieval structures, colonial-era buildings, and contemporary developments. As Patna continues to evolve, it grapples with the complexities of urbanization, population growth, and infrastructure needs, necessitating thoughtful planning and innovative solutions to shape its future trajectory.

"Architecture should be designed in such a manner that people can tell what place it belongs to" - Marina Tabassum

WHAT DO YOU SEE ?



DUBAI CHINA

INDIA TAIWAN QATAR

WHAT DO YOU SEE ?

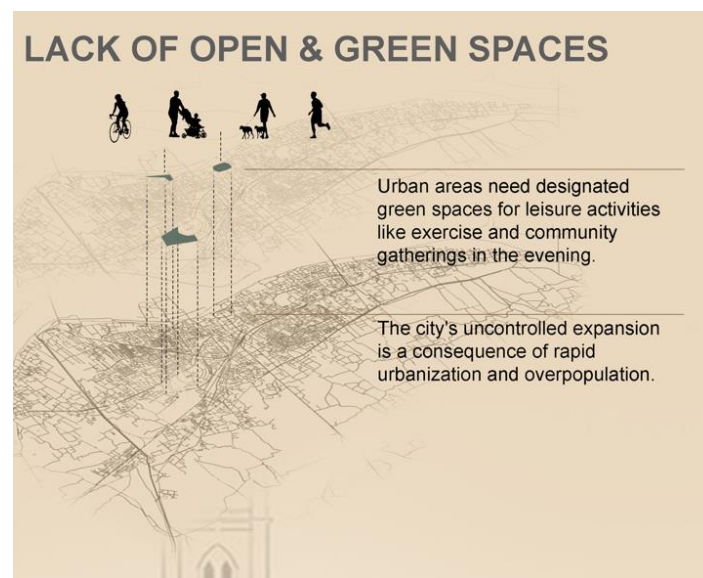


Here are several renowned structures in Patna, ranging from old to new. They depict the city's architectural heritage, yet fail to fully capture its rich diversity. Despite Patna's storied past, its contemporary buildings lack contextual significance.

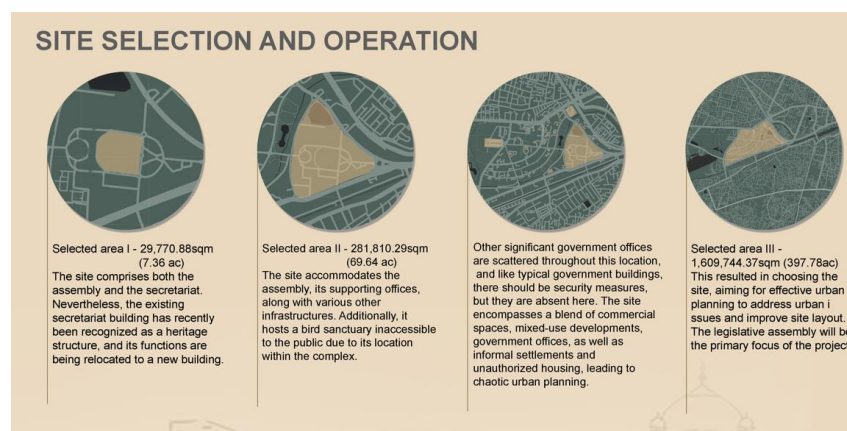
3.1.1. Place and identity

Amidst the dynamic transformation of Patna, the proposed project for the development of

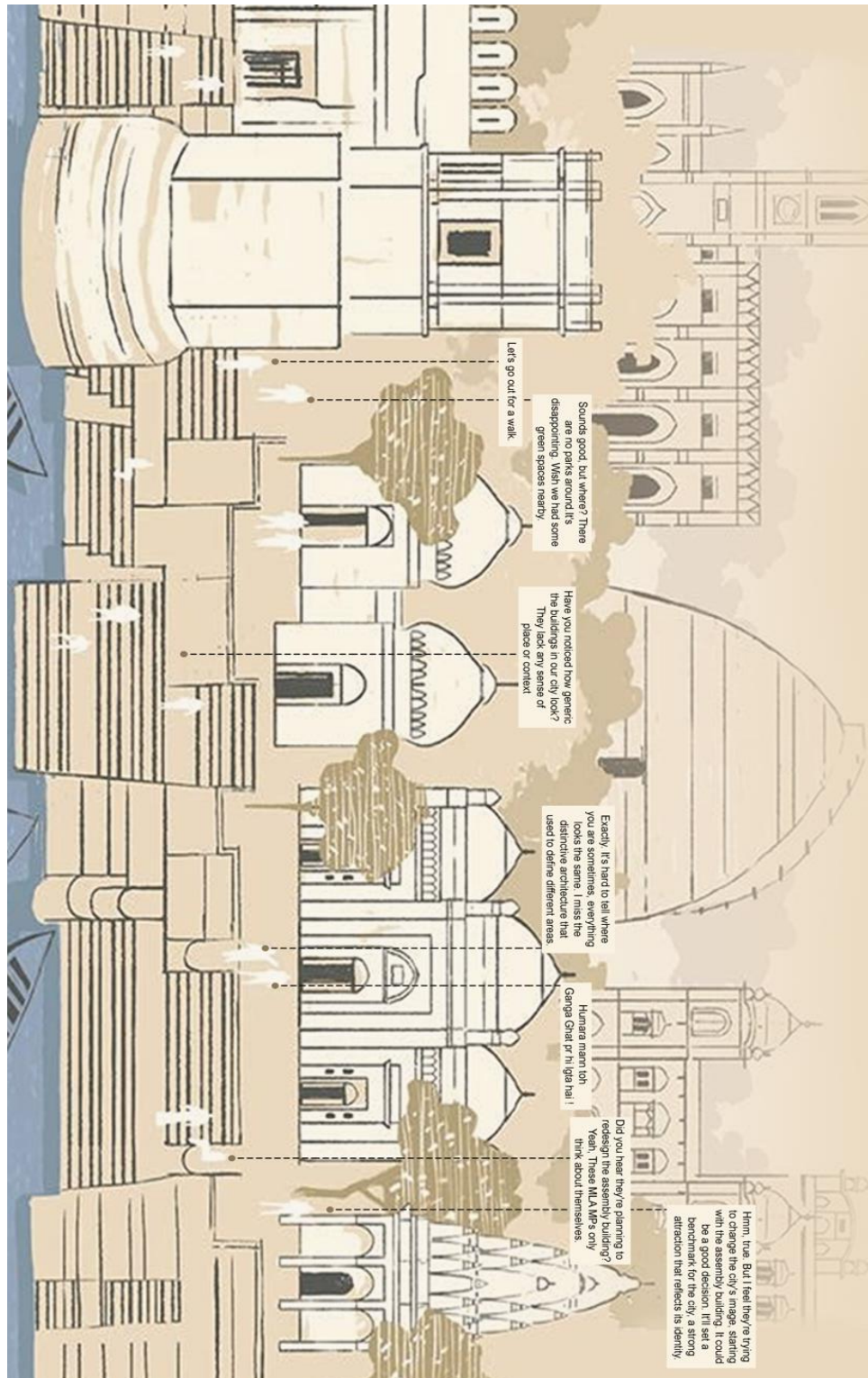
a secretariat complex in Rajbansi Nagar emerges as a vital step towards addressing the city's evolving needs and aspirations. As the administrative capital of Bihar, Patna requires modern, efficient, and functional infrastructure to support governance, facilitate public services, and promote economic growth. The project aims to provide state-of-the-art facilities for government offices, legislative assembly, and public spaces, enhancing the city's administrative capabilities and fostering a conducive environment for governance. Additionally, by drawing inspiration from Patna's rich architectural heritage, the project seeks to celebrate the city's cultural legacy and create a landmark that reflects its unique identity. In essence, the project represents a significant investment in Patna's future, ensuring that the city continues to thrive as a vibrant center of governance, culture, and progress.



3.1.2. Lack of green space



3.1.3. site operation



3.1.4. need of the project

CHAPTER 4

SITE STUDY AND ANALYSIS

4.1 SITE LOCATION

Rajbansi Nagar, Patna

The proposed site for the secretariat complex is located in Rajbansi Nagar, a prominent area in Patna, Bihar. Rajbansi Nagar is strategically situated and offers a blend of historical significance and modern urban infrastructure, making it an ideal location for the redevelopment project.

Geographical Coordinates:

Latitude: 25.6093° N

Longitude: 85.1236° E

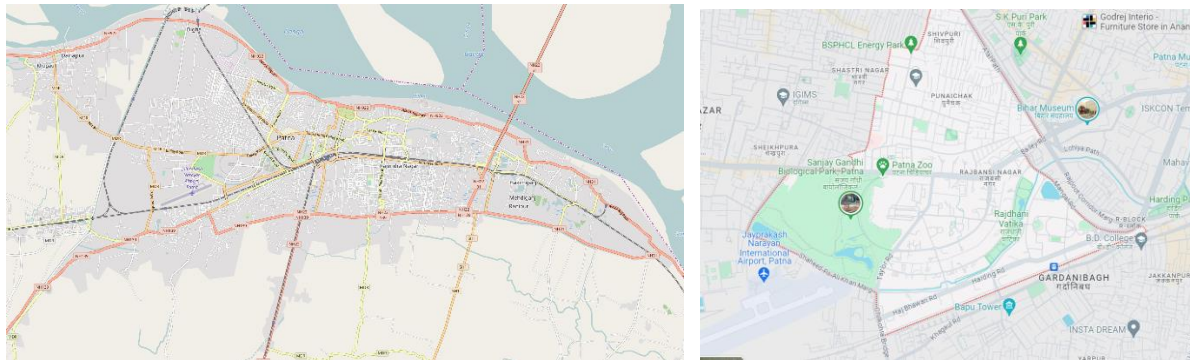


Fig 4.1.1: Site Location

The site spans approximately 400 acres, providing ample space for the development of the secretariat complex and associated facilities. **Transportation Network:** The site is well-connected by major roads and public transportation systems. The Patna Junction railway station and the Jay Prakash Narayan International Airport are nearby, enhancing accessibility. **Road Access:** Major roads such as Bailey Road and Boring Road ensure convenient connectivity.

4.2 SITE JUSTIFICATION AND FEASIBILITY

Rajbansi Nagar's central location in Patna makes it an ideal site for the secretariat complex. Its proximity to existing government offices ensures efficient administrative

functioning and coordination. The site's excellent connectivity via major roads and public transportation enhances accessibility for government officials, employees, and the general public, making it a practical choice for the secretariat complex. The vicinity of Rajbansi Nagar includes commercial establishments, residential neighborhoods, and public amenities. This diverse urban fabric supports the creation of a vibrant and dynamic environment for the secretariat complex. While the site itself may not contain significant archaeological remains, its location within the historically rich context of Patliputra adds cultural value. This historical context provides a unique opportunity to integrate the rich architectural heritage of ancient Patliputra into the modern design of the secretariat complex.

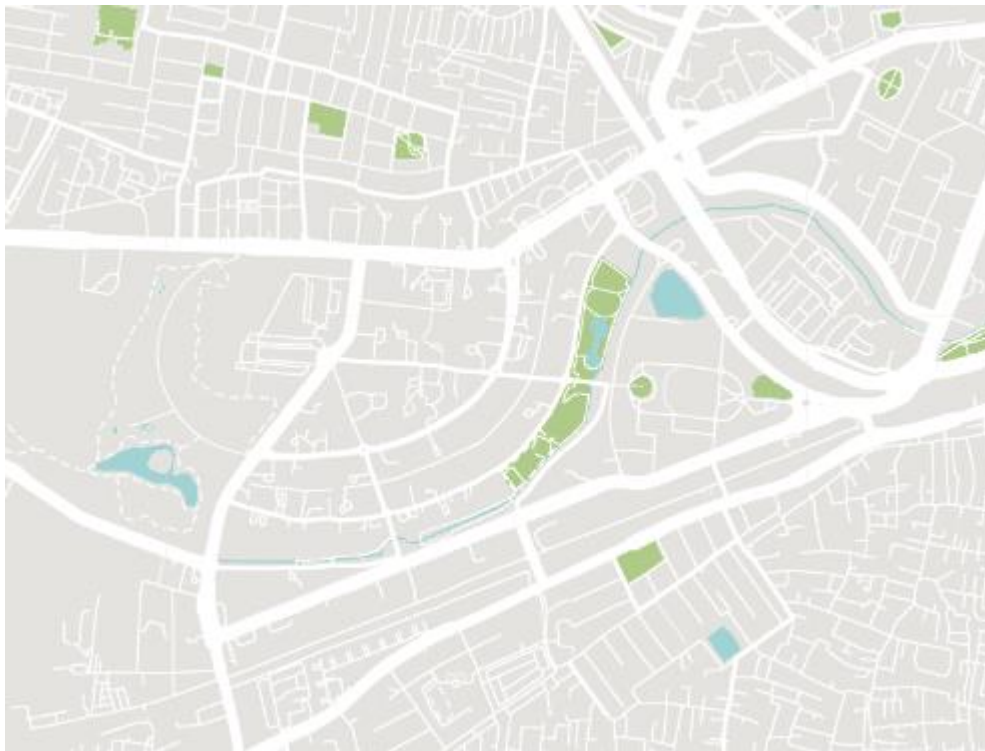


Fig 4.2.1: Site Justification

4.3 SITE HISTORY

Rajbansi Nagar, situated in Patna, the contemporary city with deep historical roots known as Patliputra, embodies a rich and significant past that stretches back over two millennia. The origins of Patliputra trace back to the 5th century BCE, founded by the Magadha ruler Ajatashatru near the strategic confluence of the Ganges and Sone rivers. This advantageous location facilitated its rapid growth into one of the largest and most sophisticated cities of the ancient world. Initially, the city was built as a fortified settlement

to defend against invasions from neighboring kingdoms, but it quickly evolved into the bustling capital of the Magadha Empire.

By the 4th century BCE, Patliputra had become the political and administrative heart of the expansive Maurya Empire under the rule of Chandragupta Maurya. The city saw significant enhancements and expansions under his reign, including extensive fortifications and the construction of grand palaces. The architectural marvels of Patliputra during this era were described by the Greek ambassador Megasthenes in his work "Indica," which provides one of the earliest accounts of the city's grandeur. He described the city's impressive wooden structures, extensive gardens, and high towers, emphasizing the sophistication of its urban planning and infrastructure.

Patliputra reached its zenith under Ashoka the Great, Chandragupta's grandson, in the 3rd century BCE. Ashoka, renowned for his role in spreading Buddhism, transformed the city into a major center of culture, religion, and learning. Under his rule, Patliputra became a hub of economic activity and intellectual exchange, attracting scholars, traders, and religious leaders from across the ancient world. The city hosted the Third Buddhist Council, which was instrumental in the spread of Buddhism. Architectural advancements during this period included the construction of stupas, viharas, and other religious structures that reflected the city's importance as a spiritual center.

In the following centuries, Patliputra continued to be an essential urban center under the Shunga and Gupta empires. The Gupta period, often referred to as the Golden Age of India, saw further developments in the city's architecture, art, and science. Patliputra retained its status as a significant seat of power, culture, and learning. However, by the 7th century CE, the city's prominence began to wane due to political instability and invasions. The Palas later controlled the region, but the city never regained its former glory.

During the medieval period, Patliputra's decline accelerated. The continuous invasions and political fragmentation led to its gradual decline. By the time of the Delhi Sultanate and later the Mughal Empire, Patliputra had largely faded into obscurity, overshadowed by other rising urban centers in northern India. The city's strategic importance diminished, and it transformed into a more modest settlement known as Patna.

Despite this decline, Patna experienced a revival under the Mughal Empire, particularly under the rule of Akbar in the 16th century. The city became an important administrative and commercial hub, known for its flourishing trade in rice, sugar, and opium. However, much of the ancient city's architectural heritage had been lost to time, natural disasters, and the relentless pace of urban development.

In modern times, archaeological excavations have uncovered remnants of ancient Patliputra, offering glimpses into its grand past. Sites such as Kumhrar and Agam Kuan in Patna have revealed significant findings, including the remains of an 80-pillared hall from the Mauryan period and ancient wells that speak to the city's sophisticated urban planning.

The proposed development of the secretariat complex in Rajbansi Nagar seeks to honor this illustrious heritage. By drawing architectural inspiration from the historical elements of ancient Patliputra, the project aims to create a modern administrative center that reflects the city's rich historical legacy. This development not only addresses the functional needs of contemporary governance but also serves as a tribute to Patliputra's enduring legacy, ensuring that its historical significance continues to shape the urban identity of Patna.

4.4 SITE ANALYSIS

4.4.1 Geographical Context

Rajbansi Nagar, the chosen site for the proposed secretariat complex, is located in the heart of Patna, Bihar, India. Situated at approximately 25.6093° N latitude and 85.1236° E longitude, the site enjoys a strategic location within the city. It spans an expansive area of 400 acres, providing ample space for the development of the complex and associated infrastructure.

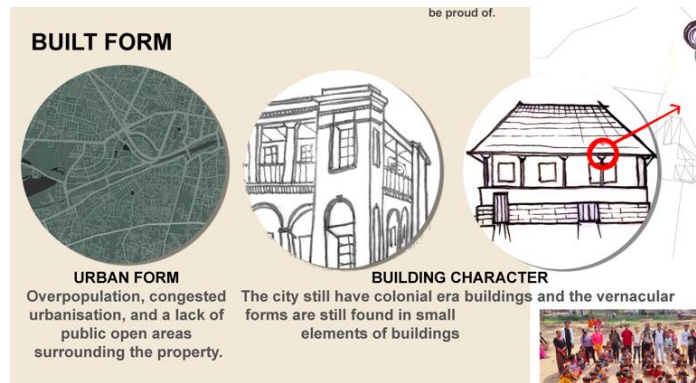


Fig 4.4.1: Built form



Fig 4.4.2: kevin Lynch

4.4.2 Topography

The topography of Rajbansi Nagar is relatively flat, with gentle slopes and no significant natural barriers. This topographical feature offers favorable conditions for construction and urban development. However, careful consideration must be given to drainage and water management to prevent issues such as flooding during monsoon seasons.



Fig 4.4.3: activities and site elements

4.4.3 Environmental Factors

Rajbansi Nagar experiences a humid subtropical climate, characterized by hot summers, a monsoon season, and mild winters. The site's environmental conditions play a crucial role in the design and construction of the complex, including considerations for energy efficiency, thermal comfort, and landscaping choices. Sustainable design strategies, such as passive cooling techniques and green infrastructure, can help mitigate the environmental impact of the development.

SOLID WASTE MANAGEMENT

Door to Door Waste Collection and manage more than 85,000 MT of plastic waste every year. The sewage pipes have been adequately installed, although there are still inconsistencies where they are open.



Fig 4.4.4: waste management

4.4.4 Surrounding Infrastructure

The site is surrounded by a mix of residential, commercial, and institutional developments. Major roads such as Bailey Road and Boring Road provide excellent connectivity to the site, facilitating easy access for government officials, employees, and visitors. Public transportation options, including bus routes and nearby railway stations, further enhance accessibility.

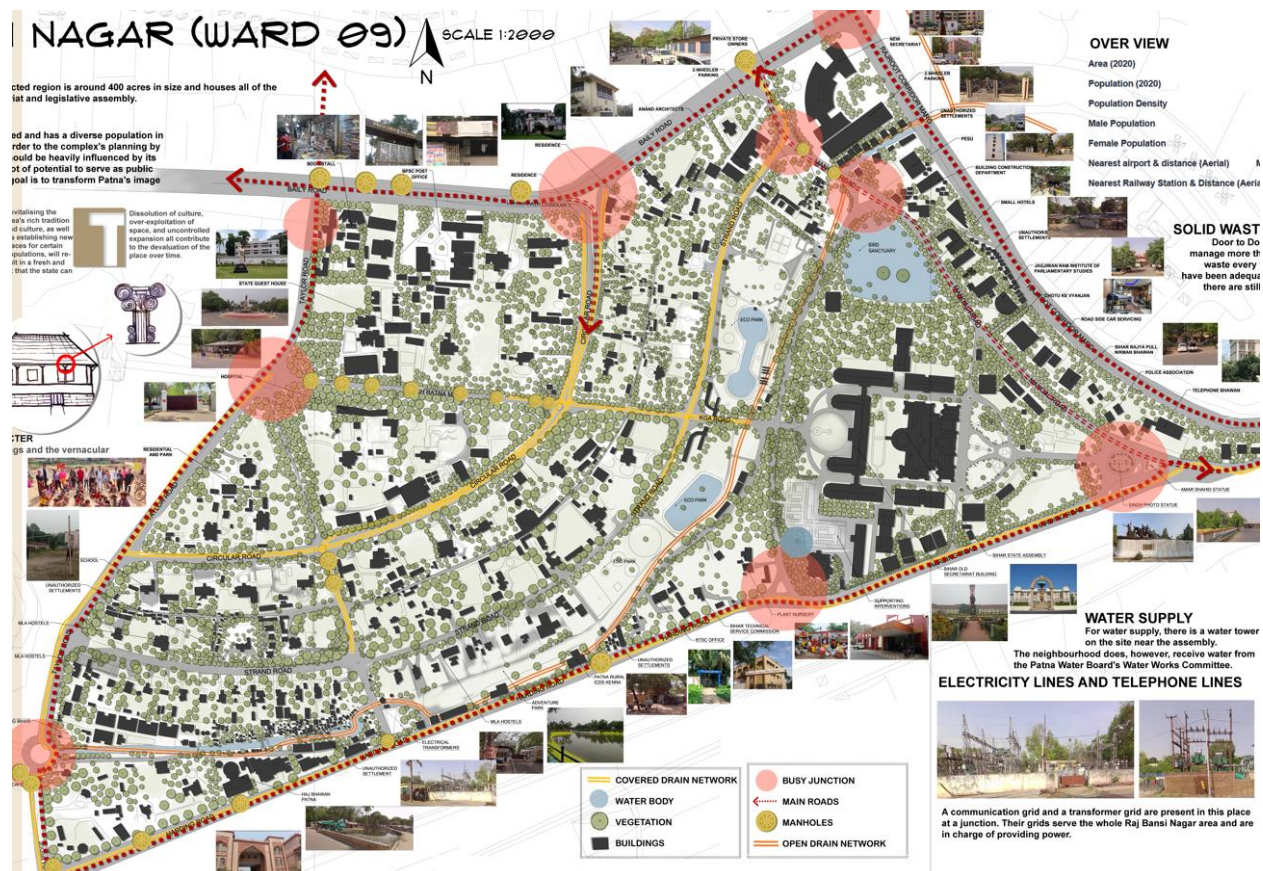


Fig 4.4.5: land use map

4.4.5 Urban Context

Rajbansi Nagar is located in close proximity to several key government offices and administrative buildings, making it an ideal location for the secretariat complex. The surrounding urban fabric includes educational institutions, healthcare facilities, and recreational areas, contributing to the overall livability and functionality of the site. However, the site's central location within the city also presents challenges related to traffic congestion and parking availability, which must be addressed through thoughtful urban planning and design solutions.

4.4.6 Zoning and Land Use

The site is currently designated for government and institutional use, aligning with the planned development of the secretariat complex. Compliance with local zoning regulations and land use policies will be ensured to facilitate a smooth approval process and adherence to legal requirements. Additionally, considerations for mixed-use development and public amenities will be integrated into the design to enhance the site's functionality and urban vibrancy.

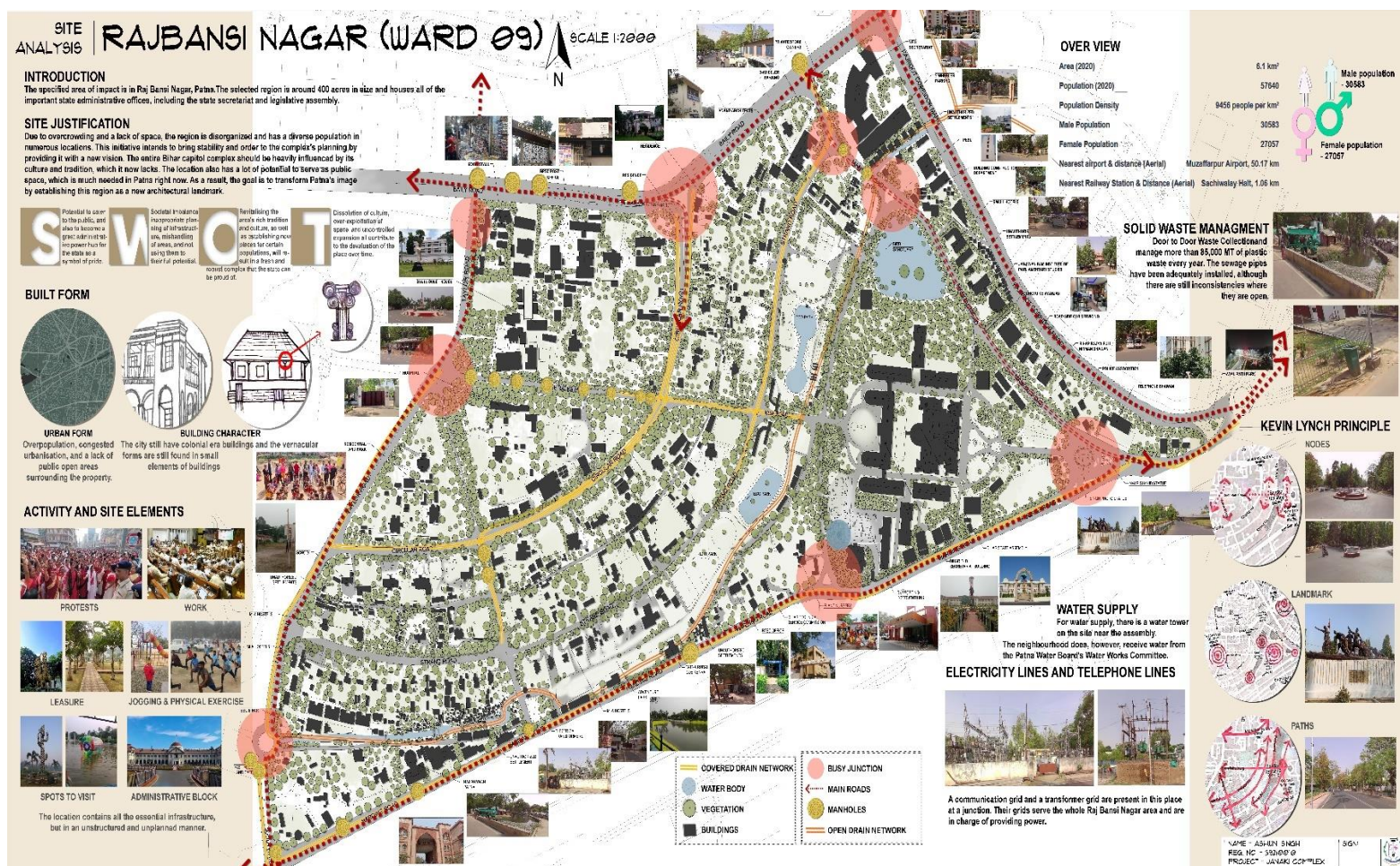


Fig 4.4.6: site study

4.5 SITE PROPOSAL

The proposed secretariat complex in Rajbansi Nagar presents an innovative and transformative vision for the urban landscape of Patna. Leveraging the strategic location and historical significance of the site, the project aims to create a modern administrative hub that embodies the rich heritage of Patliputra while meeting the functional requirements of contemporary governance. The site proposal envisions a dynamic and inclusive environment that fosters efficiency, transparency, and public engagement. By drawing inspiration from the architectural legacy of ancient Patliputra, the design seeks to establish a harmonious relationship between tradition and modernity, ensuring that the complex becomes a symbol of pride for the city. Key elements of the proposal include sustainable design practices, efficient use of space, and thoughtful integration with the surrounding urban fabric. Through careful planning and collaboration with stakeholders, the site proposal aims to redefine the role of government infrastructure in shaping the identity and future development of Patna.

The elements included in the site proposal for the secretariat complex, presented in a clear and concise format with explanations:

1. Strategic Location:

- The site is strategically located in Rajbansi Nagar, Patna, offering easy accessibility and connectivity to major transportation networks, government offices, and urban amenities.

2. Historical Significance:

- Rajbansi Nagar, situated in the historical city of Patliputra, holds cultural and historical significance as the ancient capital of powerful empires such as the Maurya and Gupta dynasties.

3. Modern Administrative Hub:

- The proposed secretariat complex aims to serve as a modern administrative center, equipped with state-of-the-art facilities and technology to facilitate efficient governance and decision-making processes.

4. Functional Requirements:

- The design of the complex will prioritize meeting the functional needs of government departments and agencies, including office spaces, meeting rooms, public areas, and support facilities.

5. Architectural Legacy:

- Drawing inspiration from the architectural heritage of ancient Patliputra, the design of the complex will incorporate elements such as traditional motifs, materials, and spatial arrangements to pay homage to the city's rich history.

6. Tradition and Modernity:

- The site proposal seeks to strike a balance between tradition and modernity, seamlessly integrating historical architectural elements with contemporary design principles to create a visually appealing and culturally significant complex.

7. Sustainability Practices:

- Environmental sustainability will be prioritized throughout the design and construction process, with a focus on energy efficiency, water conservation, waste management, and green spaces to minimize the ecological footprint of the complex.

8. Efficient Use of Space:

- The layout and spatial organization of the complex will be optimized to maximize efficiency and functionality, ensuring that every square foot of the site is utilized effectively to meet the needs of government operations and public use.

9. Integration with Urban Fabric:

- The design of the complex will be sensitive to its surroundings, harmoniously integrating with the existing urban fabric of Rajbansi Nagar and enhancing the overall aesthetic and functional quality of the neighborhood.

10. Stakeholder Collaboration:

- Collaboration with government officials, urban planners, architects, historians, and residents will be integral to the success of the project, ensuring that the complex reflects the aspirations and priorities of the community.

11. Identity and Future Development:

- The secretariat complex will not only serve as a functional government facility but also as a symbol of pride and identity for the city of Patna, setting a precedent for future development initiatives and enhancing the overall livability and attractiveness of the region.



Fig 4.5.1: site zoning

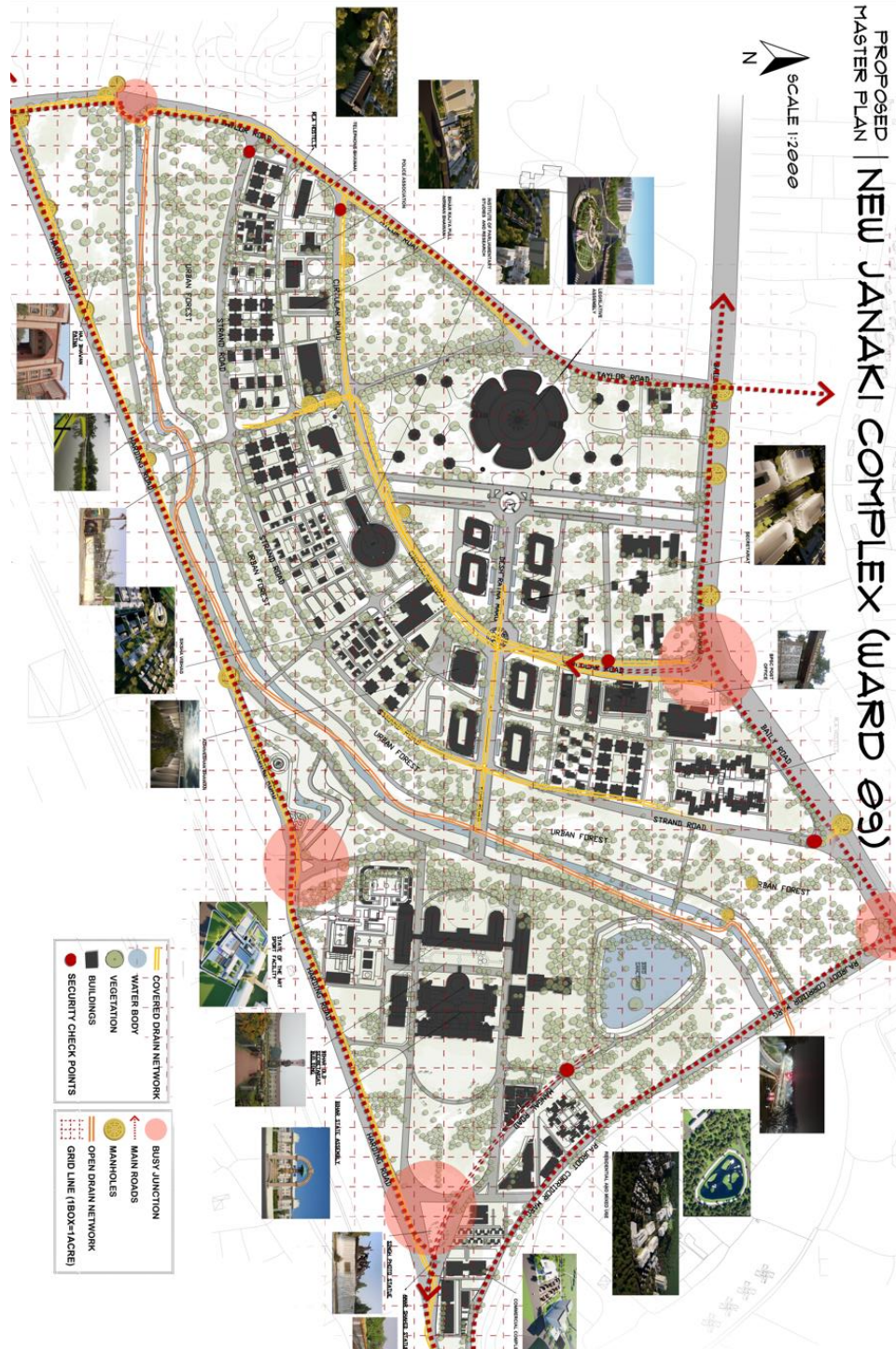


Fig 4.5.2: site proposal

CHAPTER 5

ARCHITECTURAL DESIGN

5.1 PROPOSED MASTER PLAN

The proposed master plan for the development of Patna's secretariat complex in Rajbansi Nagar represents a transformative vision for the city's urban landscape. Envisioned as a modern administrative hub that harmoniously blends functionality, sustainability, and architectural heritage, the master plan aims to address the evolving needs of governance while preserving Patna's rich cultural legacy. At its core, the master plan emphasizes efficient space utilization, with meticulously designed office spaces, meeting facilities, and support amenities to optimize workflow and productivity for government officials and employees.

Moreover, the master plan prioritizes sustainability principles, incorporating green spaces, energy-efficient infrastructure, and eco-friendly design features to minimize environmental impact and promote a healthy urban environment. Through innovative urban design strategies, such as pedestrian-friendly pathways, cycling lanes, and green corridors, the master plan fosters connectivity, accessibility, and inclusivity, enhancing the overall livability of the complex and its surrounding areas.

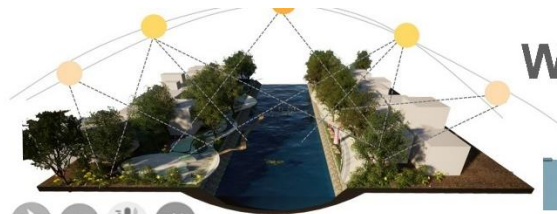
Drawing inspiration from Patna's architectural heritage, the master plan integrates elements of traditional craftsmanship, cultural motifs, and historical narratives into its design aesthetic. From ornamental facades to landscaped courtyards, the complex reflects a synthesis of past and present, paying homage to the city's illustrious past while embracing the aspirations of its future. Additionally, the master plan incorporates public spaces and recreational amenities, including parks, plazas, and cultural venues, to encourage community engagement, social interaction, and cultural exchange within the complex.

Furthermore, the master plan emphasizes resilience and adaptability, incorporating provisions for disaster preparedness, climate resilience, and future expansion to ensure the long-term sustainability and functionality of the complex. Collaborative efforts with urban planners, architects, government stakeholders, and local communities are integral to the master plan's success, fostering transparency, accountability, and shared ownership in the planning and implementation process.



Fig 5.1.1: site Usability

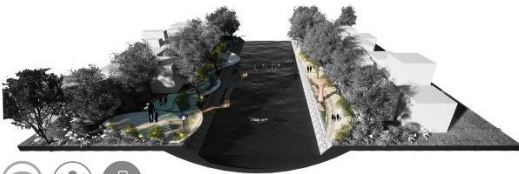
In essence, the proposed master plan for Patna's secretariat complex in Rajbansi Nagar embodies a holistic approach to urban development, where governance, culture, and sustainability converge to create a dynamic and inclusive urban environment. As a symbol of progress and identity for the city, the master plan paves the way for a vibrant future, where Patna's past achievements inspire its present endeavors and shape its aspirations for generations to come



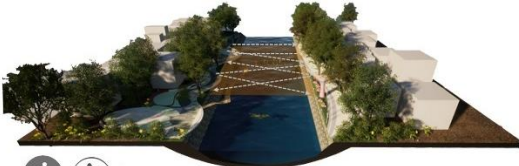
INCREASED GREEN COVER



STORM WATER DRAINAGE & SPONGE CITY

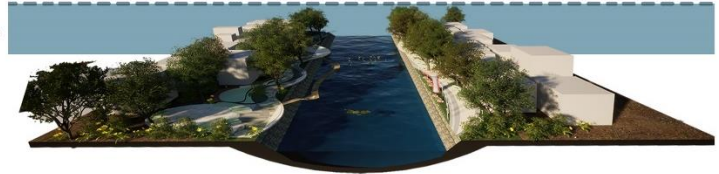


SOCIO-ECONOMIC & COMMUNITY ENGAGEMENT

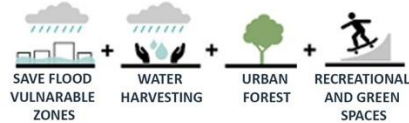


CYCLING AND PEDESTRIAN

WATER FRONT DEVELOPMENT



DEVELOPMENT PROPOSAL
USE - WATER MANAGEMENT + ECONOMY + RECREATIONAL
+ BIODIVERSITY + PEDESTRIAN + CYCLING



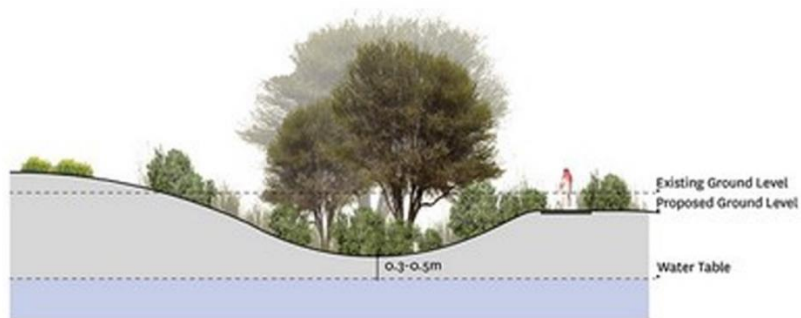
A dense green urban forest is introduced on either side of the canal as part of the canal front proposal, with various interventions such as cafes, walkways, Parks, e-cycles and cycling lanes, Waterfront Promenades, Market space, public amenities, Outdoor Fitness and sports Areas, Art Installations, Seating spaces, Wi-Fi and Charging Stations, and pavillions. This will offer a wide range of benefits to the community, the environment, and the local economy. This will lead in Increased Green Space, Improved Aesthetics, Biodiversity, Air Quality, Climate Resilience, Community Gathering, Accessibility and Sustainability.

Fig 5.1.2: canal front

ELEMENTS



SALT-TOLERANT LANDSCAPE STRATEGY



CREATION OF CHARACTERISTIC PAVERS

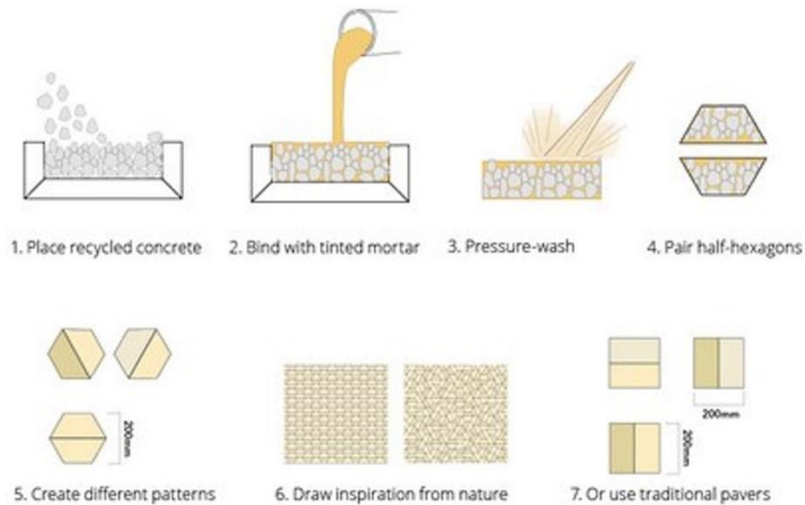
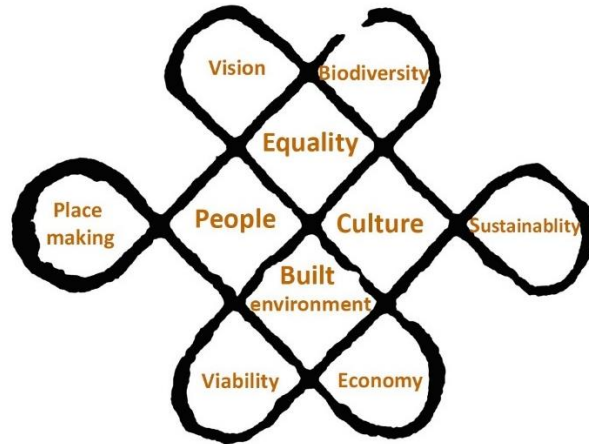
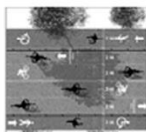


Fig 5.1.3: urban elements

CONCLUSION



The design proposal offers an exciting chance to revitalize the space into a sustainable urban asset for Patna.

It includes elements like a pedestrian platform for safety and connectivity, active public spaces for community well-being, and green infrastructure for environmental sustainability. This plan follows modern urban principles, prioritizing inclusivity, accessibility, and healthy lifestyles.

5.2 PROPOSED SITE PLAN





functionality, flexibility, and user-centricity, ensuring that the assembly chambers, committee rooms, offices, and support facilities are thoughtfully organized to meet the diverse needs of lawmakers, administrative staff, and visitors.

At the heart of the legislative assembly complex lies the main assembly hall, a grand and dignified space designed to accommodate legislative sessions, debates, and ceremonial functions. The hall features tiered seating arrangements for legislators, with a central podium for the presiding officer and designated areas for government officials, opposition members, and media representatives. State-of-the-art audiovisual systems, voting mechanisms, and interpretation services are seamlessly integrated into the assembly hall to facilitate efficient communication and decision-making processes.

Adjacent to the main assembly hall are committee rooms and caucus chambers, where lawmakers convene for specialized discussions, policy debates, and committee hearings. These spaces are equipped with modern amenities, including audiovisual equipment, teleconferencing facilities, and multimedia presentation tools, to support collaborative decision-making and information sharing among legislators and stakeholders.

In addition to legislative spaces, the floor plans include administrative offices, support facilities, and public areas to enhance the functionality and accessibility of the complex. Administrative offices for legislative staff, parliamentary secretaries, and support personnel are strategically located for ease of coordination and workflow efficiency. Public areas, such as lobbies, reception areas, and galleries, provide spaces for citizen engagement, public hearings, and educational programs, fostering transparency, accountability, and civic participation in the legislative process.

Moreover, the floor plans incorporate principles of universal design, accessibility, and safety to ensure that the legislative assembly complex is inclusive and welcoming to all users, including individuals with disabilities, elderly citizens, and diverse communities. Barrier-free pathways, ramps, elevators, and assistive technologies are integrated throughout the complex to enable seamless movement and participation for individuals of varying abilities.

Overall, the floor plans of the proposed legislative assembly embody a harmonious balance of functionality, aesthetics, and inclusivity, reflecting the core values of democracy, governance, and public service. As a symbolic centerpiece of the secretariat complex, the legislative assembly serves as a beacon of democratic ideals and legislative excellence, inspiring civic pride and engagement in the citizens of Patna and beyond.

5.3 CONCEPT

The concept behind the proposed secretariat complex and legislative assembly in Rajbansi Nagar embodies a holistic approach to urban development, rooted in the principles of functionality, sustainability, cultural heritage, and civic engagement. At its core, the concept seeks to create a dynamic and inclusive urban environment that fosters good governance, enhances quality of life, and celebrates the rich heritage of Patna.

One of the central concepts guiding the design of the complex is functionality. The layout and organization of spaces are meticulously planned to optimize workflow, efficiency, and productivity for government officials and employees. From the legislative assembly chambers to administrative offices and public areas, every element is designed to support the diverse needs of governance processes while promoting collaboration, transparency, and accountability.

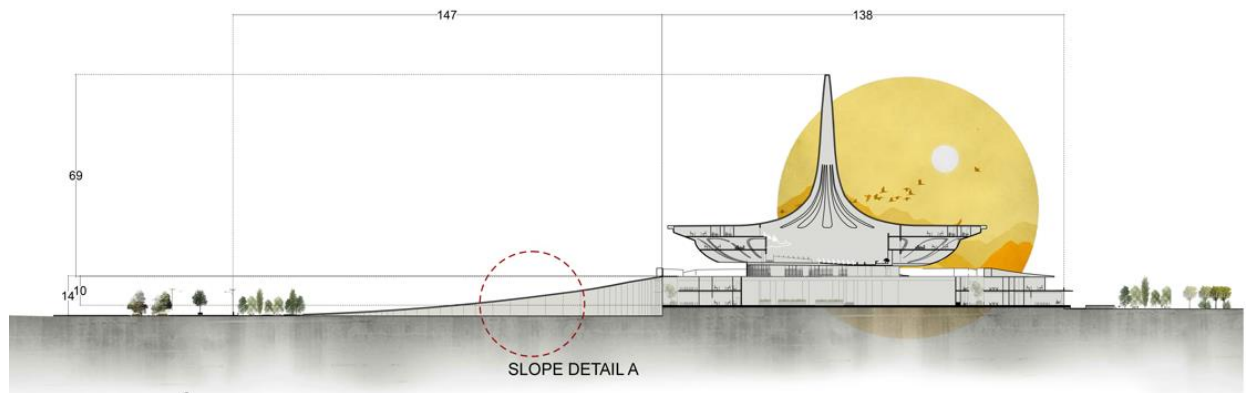


Fig 5.1.5: SECTION

Sustainability is another key concept that underpins the design of the complex. The architectural design incorporates green building principles, energy-efficient technologies, and sustainable materials to minimize environmental impact and promote resource conservation. Green spaces, rainwater harvesting systems, and renewable energy sources are integrated into the complex to create a healthy and environmentally responsible urban environment.

Moreover, the concept of cultural heritage plays a significant role in shaping the architectural identity of the complex. Drawing inspiration from Patna's rich history and architectural legacy, elements of traditional craftsmanship, cultural motifs, and historical narratives are woven into the design aesthetic. By preserving and celebrating the city's cultural heritage, the complex serves as a symbol of pride and identity for the community, fostering a sense of belonging and collective memory.

Civic engagement is also a fundamental concept driving the design of the complex. Public spaces, such as plazas, gardens, and galleries, are incorporated into the design to encourage community interaction, social exchange, and cultural expression. These spaces serve as venues for public events, educational programs, and civic dialogues, fostering a vibrant civic culture and empowering citizens to actively participate in the governance process.

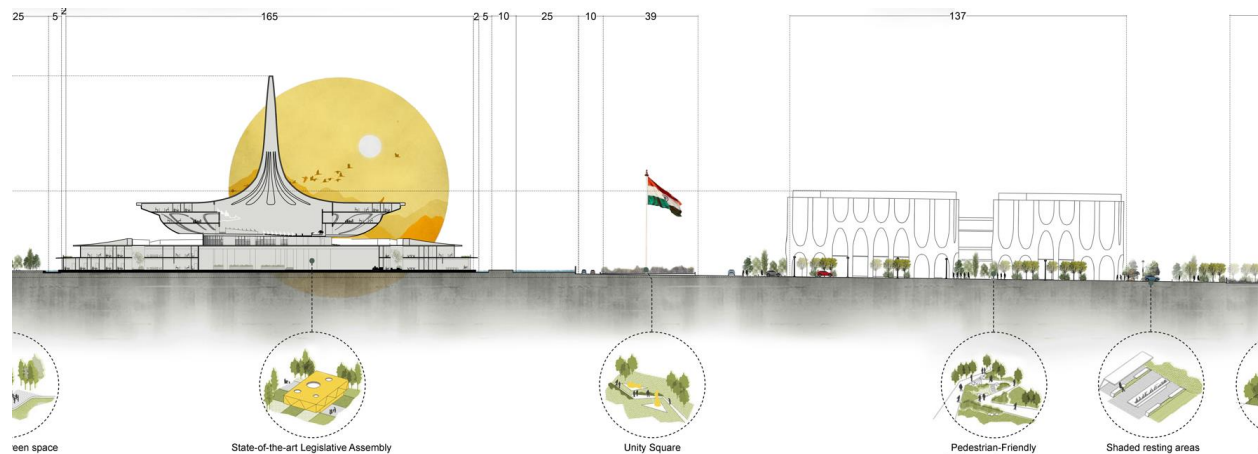
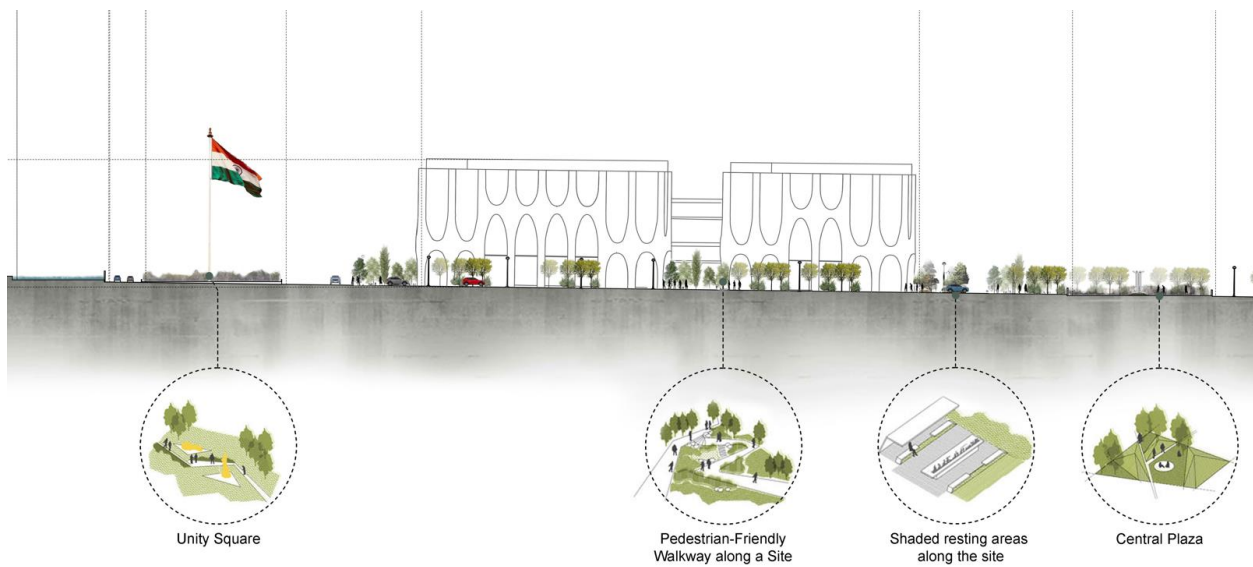
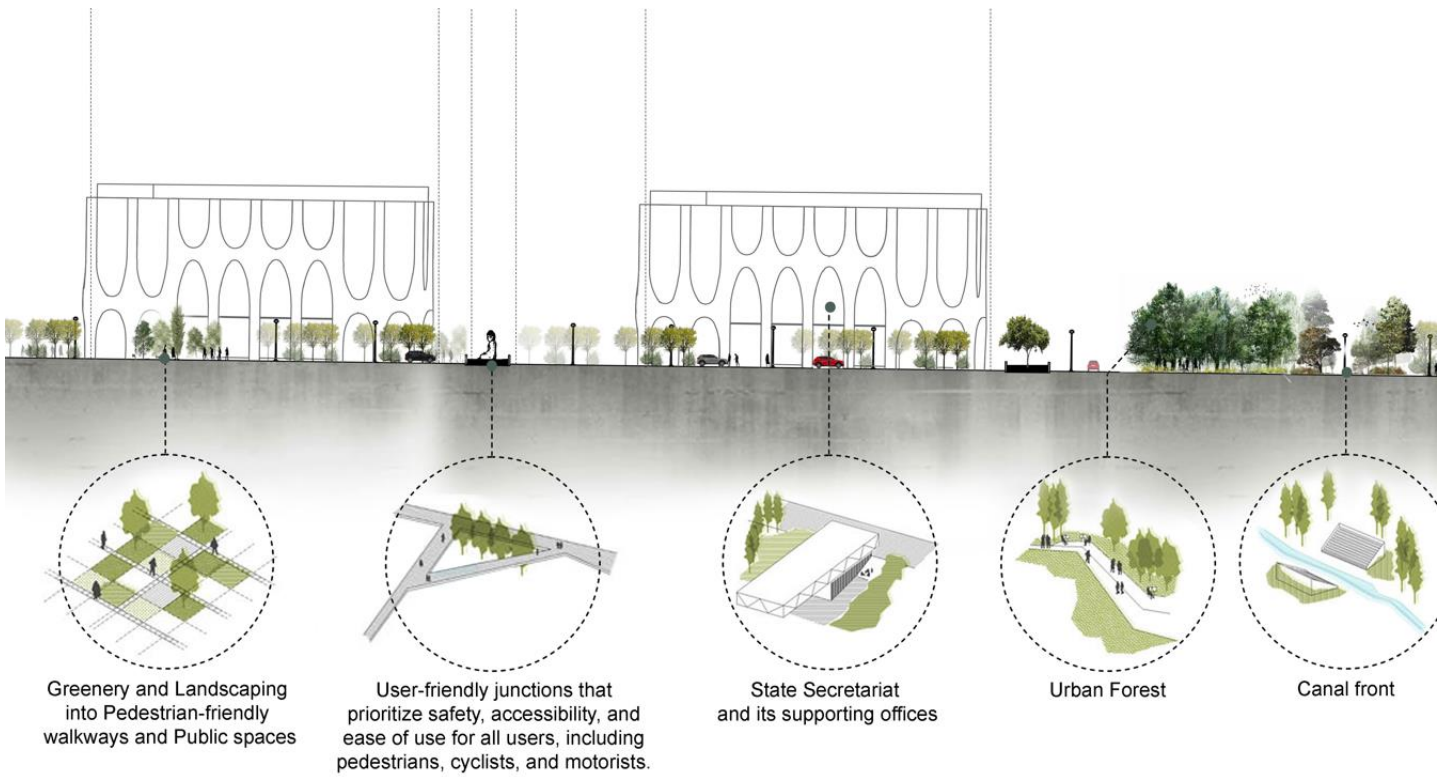
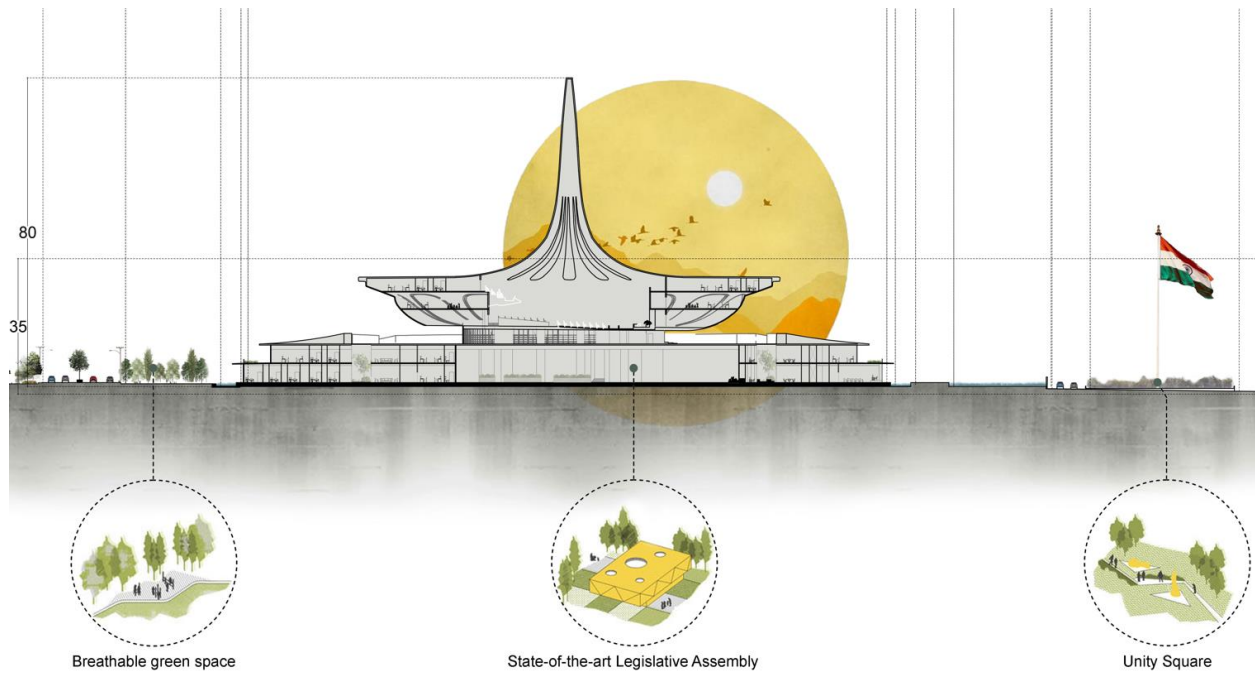


Fig 5.1.5: USER

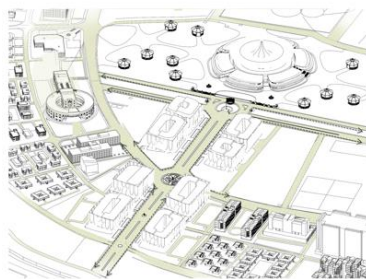
In essence, the concept behind the proposed secretariat complex and legislative assembly in Rajbansi Nagar represents a visionary approach to urban development that integrates functionality, sustainability, cultural heritage, and civic engagement. By embracing these principles, the complex aims to create a model for inclusive and sustainable urban growth that reflects the aspirations and values of the community it serves.

5.4 USABILITY



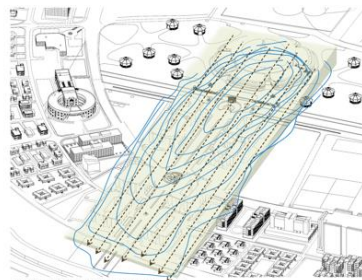
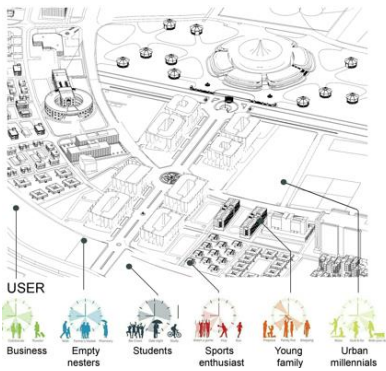
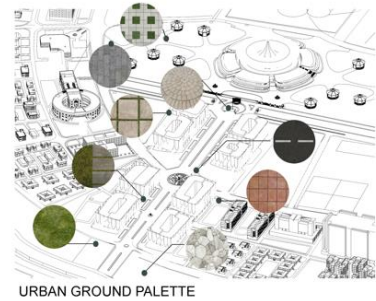
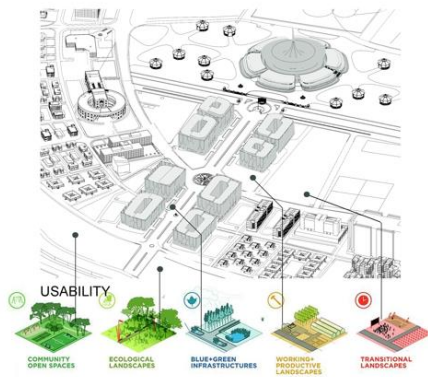


DESIGN RESPONSE

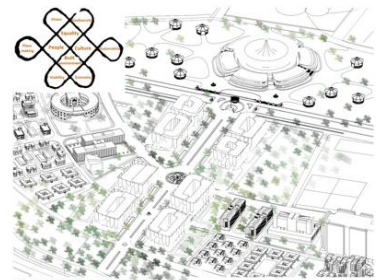


DESIGN RESPONSE

Vehicular ● **Pedestrian**
The site integrates tailored security measures while efficiently supporting both vehicular and pedestrian traffic. Designed with safety and accessibility in mind, it ensures smooth movement for all users.



The site's natural elevation places the assembly building above neighboring structures, enhancing its prominence. Moreover, drainage systems have been strategically implemented to manage water flow effectively, minimizing flood risks.





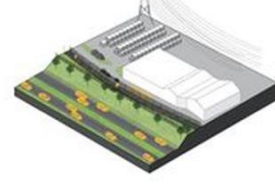
ROADSIDE VEGETATION

By integrating lush greenery along all roadways, this initiative not only enhances the aesthetic appeal of the surroundings but also contributes to improved air quality, creating a healthier and more visually pleasing urban environment.



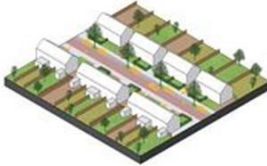
COHESIVE PLANNING

Careful planning ensures easy access and cleanliness throughout the integrated canal, green spaces, and road network, creating a cohesive and inviting urban environment.



HIGHLY DYNAMIC URBAN DESIGN

The space is strategically planned and designed to accommodate a diverse range of activities simultaneously, fostering a dynamic and vibrant urban environment.



SEAMLESS INTEGRATION

Incorporating lush vegetation and open areas into residential and commercial buildings creates a harmonious blend of natural and built environments, fostering a vibrant and sustainable urban landscape.



CANAL FRONT

The revitalized canal front is adorned with lush greenery, significantly enriching the ambiance and usability of the area, creating a more inviting and vibrant urban space.



VEGETATION

The vegetation serves multiple purposes beyond air quality, including security and privacy, especially in residential areas adjacent to it.



INTEGRATION OF OPEN SPACES

Open vistas and lawns provide versatile areas for community gatherings, recreation, and multifunctional purposes, enhancing the quality of urban life.



URBAN ZONES AND INFRASTRUCTURE

To enhance usability and efficiency, a balanced integration of private, semi-private, and public infrastructure is meticulously executed, ensuring seamless functionality and optimal use of urban spaces.



OVER VIEW

The overall integration of amenities and infrastructure across all zones is meticulously planned, taking into account the needs of diverse user types.









CHAPTER 6

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3. Journal of Architectural Conservation - Covers topics related to the conservation and preservation of architectural heritage.
4. Public Administration Review - Publishes articles on public administration, governance, and policy analysis.
5. International Journal of Sustainable Development and Planning - Focuses on sustainable development practices in urban and regional planning.
6. Journal of Urban and Regional Planning - Publishes research on urban planning, development, and renewal with a focus on Indian cities.
7. Urban India - A journal covering various aspects of urbanization, including renewal, infrastructure, and governance, in the Indian context.
8. Indian Journal of Urban and Regional Research - Publishes scholarly articles and research papers on urban issues, including renewal and development, in India.
9. Journal of Indian Society of Remote Sensing - Focuses on remote sensing and geospatial technologies for urban planning, monitoring, and renewal in Indian cities.
10. Indian Journal of Transport Management - Covers transportation planning and management in urban areas, including strategies for renewal and sustainable mobility.
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12. Bihar Journal of Governance and Development - Covers governance, policy, and development issues in Bihar, including urban renewal initiatives in Patna.
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