

Abandoned to Avant-Garde: Mohini Mill Revitalized

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Abstract— The transformation of Mohini Mill, a forgotten industrial relic, into an avant-garde cultural venue is a prime example of urban revitalization and creative reuse. An avant-garde cultural venue is a space dedicated to innovative, experimental, and boundary-pushing artistic, intellectual, and cultural expressions. It serves as a hub for unconventional ideas, fostering creativity, dialogue, and interdisciplinary collaborations. Once a symbol of industrial decline, the mill has been cleverly redesigned, combining historic preservation with cutting-edge modernity. This adaptive reuse will retain the mill's architectural character while infusing it with contemporary design elements, effectively connecting its historic past with its present-day function. The revitalization process involved meticulous renovation, utilizing the mill's existing structure to create a dynamic and flexible space. Today, Mohini Mill functions as a sophisticated platform for art exhibitions, performances and community events, fostering rich cultural dialogue and creative exchange. This successful blend of old and new not only preserves the historical value of the site but also responds to current cultural needs and trends. Community engagement and strategic design were essential to this transformation, allowing Mohini Mill to function as a cultural beacon that connects historical depth with modern dynamism. This project illustrates the broader trend of reimagining historic buildings as progressive, multi-functional monuments. It demonstrates how thoughtful redevelopment can revitalize neglected spaces, transforming them into pioneering hubs that celebrate heritage while contributing to the contemporary urban landscape. The redevelopment of Mohini Mill is a testament to the transformative power of visionary urban renewal.

Index Terms— Mohini mill, avant-garde, industrial, revitalization, community. (key words)

I. INTRODUCTION

Cities often bear the remnants of their industrial past in the form of neglected buildings and abandoned infrastructure—commonly referred to as grey spaces. These spatial voids, typically characterized by decay, disuse, and socio-economic exclusion, pose both challenges and opportunities for contemporary urbanism [03]. In such contexts, architecture is not merely a tool of construction but can serve as a catalyst for healing—socially, environmentally, and spatially. Grey spaces are a byproduct of shifting economic structures, post-industrial decline, and urban migration patterns. Left behind by obsolete industries, they often become zones of socio-spatial neglect and degradation [08]. While these spaces may appear derelict or dysfunctional, they retain rich historical, cultural, and ecological layers that offer a fertile ground for regenerative urbanism [4]. They occupy a liminal state in the urban landscape, neither fully abandoned nor fully integrated—and require design strategies that go beyond conventional development or preservation models [05]. Architecture, in this context, becomes a tool not just of spatial repair but of urban healing—a process that involves reconnecting people with place, memory with form, and ecology with infrastructure [10]. This healing framework aligns with a growing discourse on the role of design in addressing urban trauma, heritage erasure, and ecological fragmentation [11]. The notion of healing in architecture encompasses the repair of both physical fabric and collective identity, making it a critical lens for the transformation of post-industrial sites. The concept of adaptive reuse is central to this approach. As cities seek to reduce environmental impact and preserve cultural identity, reusing existing structures emerges as a sustainable and meaningful strategy [01]. Adaptive reuse offers an alternative to demolition by allowing architecture to evolve through layered interventions that respect historical materiality while introducing contemporary functions. When thoughtfully executed, such reuse fosters continuity, memory, and civic engagement, especially in regions undergoing rapid urban transformation [07], [09].

This paper focuses on Mohini Mill, a decommissioned textile factory located in Sylhet, Bangladesh. Once a thriving industrial center, the mill is now a disused relic situated amidst growing urban activity. Despite its central location and historical significance, the site remains disconnected from public life and suffers from physical degradation, land disputes, and socio-political neglect. Mohini Mill embodies many of the characteristics of grey space—architecturally valuable but spatially forgotten, historically rich but functionally obsolete. The regeneration of such sites in South Asian contexts demands a nuanced approach that balances heritage conservation, ecological restoration, and socio-cultural engagement. In Bangladesh, many post-industrial spaces have either been demolished in favor of speculative development or left to deteriorate without strategic intervention. In contrast, this research argues for a design framework rooted in architectural healing—wherein Mohini Mill is transformed into a civic landscape that acknowledges its past while addressing the contemporary needs of the city. The study draws from interdisciplinary fields such as landscape urbanism, memory studies, and participatory design to outline how healing-oriented architecture can reintegrate grey spaces into the urban ecosystem [02]. Rather than erasing the past, the project embraces it as a foundation for place-making. This involves preserving key architectural features, engaging local communities, and restoring ecological processes within the site. In doing so, the transformation of Mohini Mill aims to promote urban continuity, social cohesion, and environmental awareness. Through critical analysis and speculative design exploration, this research offers a replicable framework for grey space regeneration that is context-sensitive, inclusive, and ecologically responsive. Architecture is positioned not as a top-down solution but as a curative practice that mends the ruptures left by industrial decline and urban neglect. By situating Mohini Mill within this regenerative discourse, the study contributes to a broader understanding of how abandoned industrial sites can be reimagined as instruments of urban healing.

II. METHODOLOGY

This research is analyzed from a deeply human-centered approach that weaves together reflective theory, hands-on exploration, and imaginative design thinking. Rather than confining itself to abstract concepts or mere data points, it listens attentively to the textures, stories, and rhythms embedded in the fabric of Mohini Mill. Here, architecture transcends the act of building, it becomes a way of asking meaningful questions about memory, place, and healing. The design process unfolds as a dialog with the site itself, shaped through careful observation, thoughtful reflection, and creative envisioning of what could be. Driven by the conviction that design is a potent form of research, this study draws upon diverse fields, including urban theory, landscape urbanism, heritage studies, and participatory design. The architectural insights do not arise from theory alone but emerge through deep engagement with the mill's context and the voices of its community [12]. By blending these multiple perspectives with direct experience and local narratives, this methodology reveals the many layers of Mohini Mill's past and its potential future. It strives to craft a design that heals, reconnects, and breathes new life into a place long forgotten.

Site Location: Set quietly along the gentle curves of the Gorai River, the site of Mohini Mill lies in Millpara, Kushtia, a place once alive with textile industry, now echoing with silence. Long stripped of its function, the site remains rich in meaning. With its fractured walls and rusted structures, it tells a layered story, one of human labor, of economic shifts, and of time standing still.

The site occupies a kind of urban grey zone. No longer productive, not yet reimagined. Its current condition is part ruin, part relic & holds untapped potential. It asks to be noticed again, not as a leftover of the past but as a space with the capacity to heal, to connect, and to serve a new purpose. Choosing this site is not just a matter of location, but of intention: to engage with what the city has forgotten, and to reframe it through design.

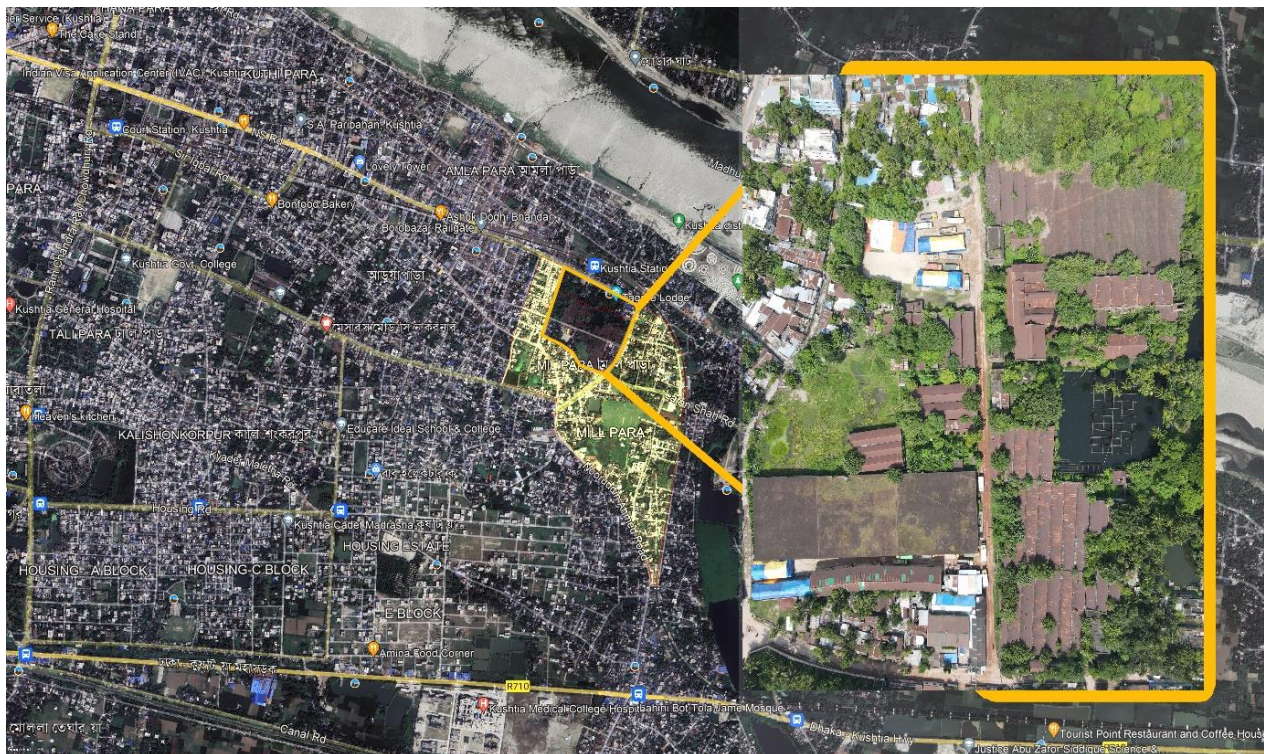


Figure 1: Location of the study area (Source: Google map, Modified by author, 2024)

III. LITERATURE REVIEW

To understand how architecture might heal urban wounds like those found in Mohini Mill, we must first unpack the layered terms at the heart of this inquiry like grey space, adaptive reuse, urban healing, landscape urbanism, and memory in architecture. Each of these concepts plays a role in shaping the theoretical spine of this study. Moreover, the background study of this site also plays an important role in proper understanding.

Grey Space

The term grey space was coined by Yiftachel [16] to describe urban areas that exist in a state of semi-legality, semi-visibility, and semi-permanence. These are neither fully integrated into the formal city nor completely abandoned. They are in limbo waiting for recognition, renewal, or erasure. In the context of Mohini Mill, grey space reflects both its physical neglect and its social exclusion. Yiftachel writes, "Grey spacing refers to the operation of power that suspends these spaces between the 'white' of legality and the 'black' of eviction or demolition" [16].

Adaptive Reuse

Adaptive reuse is the process of repurposing buildings for uses other than those initially intended, while retaining their historic features [13]. It is not just a technical act, but a cultural and ethical stance toward preservation and sustainability. Through adaptive reuse, obsolete structures like Mohini Mill gain new life, connecting past legacies to future needs.

Urban Healing

While the idea of healing is often associated with the body or psyche, urbanists have extended this to the city—viewing certain architectural and spatial interventions as tools for repairing social and ecological ruptures. According to Thompson [14], urban healing involves “design strategies that repair broken urban fabrics, reestablish community ties, and restore ecological balance.”

Landscape Urbanism

Emerging in the late 1990s, landscape urbanism champions the role of landscape—not architecture—as the primary medium of urban order [15]. This approach emphasizes process, ecology, and time, arguing for flexible, open-ended systems rather than rigid master plans. In contexts like Mohini Mill, where rigid functions have collapsed, landscape urbanism allows for more dynamic, adaptive futures.

Urban Open Space

Urban open space refers to areas within cities that are accessible, breathable, and often communal—parks, plazas, riverfronts, vacant lands. But more than that, they are opportunities. According to Gehl [19], “open spaces are the lungs of the city and the stages for everyday life.” They serve not only ecological functions but also psychological and social ones offering rooms for play, protest, leisure, or simply pause. In the context of Mohini Mill, the absence of such spaces in the surrounding urban fabric amplifies the site's potential to become one.

Early History of Kushtia

TIMELINE

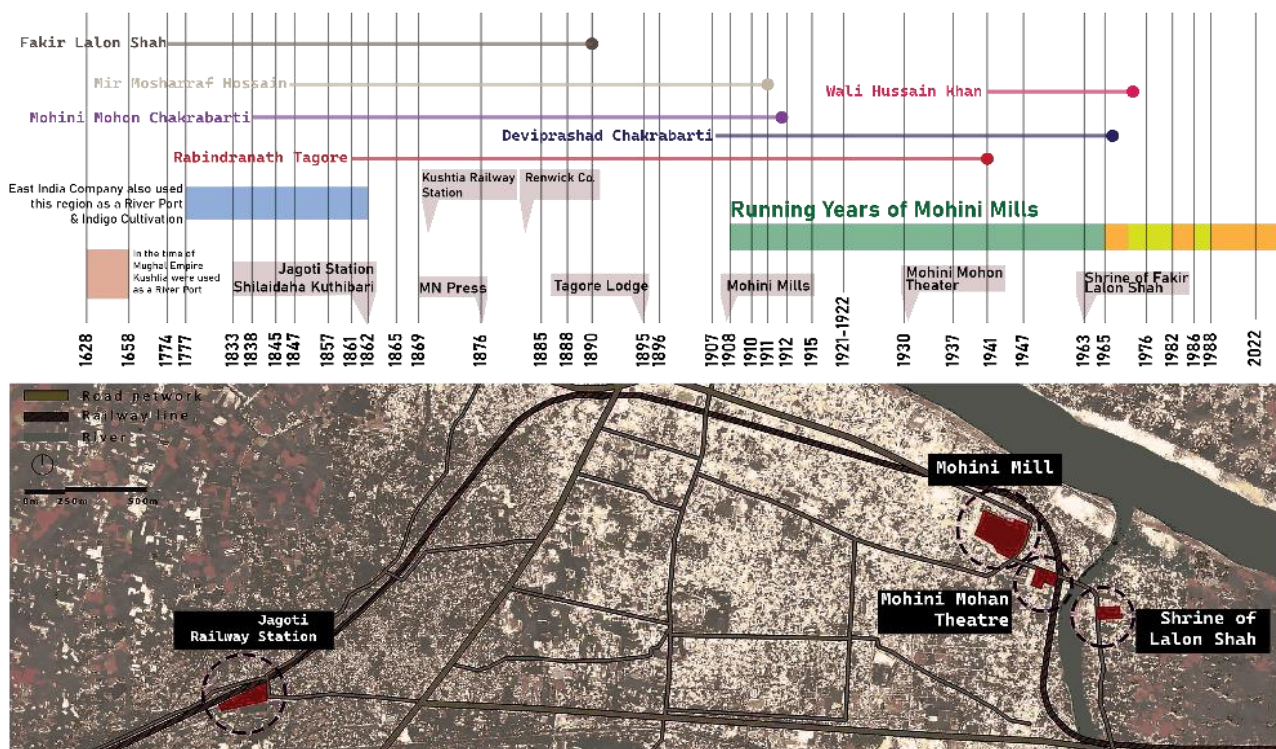


Figure 2: Historical Timeline (By Author, 2024)

To grasp the significance of **Mohini Mill** and its place within Kushtia’s evolving urban fabric, it’s essential to revisit the region’s layered history from colonial reorganization to industrial emergence.

Origins & Administrative Evolution

Kushtia’s origins trace back to riverine settlements along the Padma and Garai rivers. What is now Old Kushtia lies near Padma’s Talbaria channel within Mirpur Thana—once a hub of riverine activity. In 1760, the Mughal administrative Chakla system was replaced under Nawab Mir Qasim, and by 1778 Kushtia was incorporated into the vast **Mohammadshahi** district, one of Bengal’s 28 administrative units of the time [17] [18]. This cemented Kushtia’s early identity as part of colonial-era governance.

By 1828, the region was attached to Pabna district; administrative ties to Jessore and later Nadia emerged through the 19th century. In 1861, following the Indigo Revolt, Kushtia became a subdivision. By 1947, it had formally become a district in East Pakistan, comprising Kushtia, Chuadanga, and Meherpur subdivisions [17].

Industrial Emergence & Infrastructure

The mid-19th century marked Kushtia’s transformation into an industrial and transportation node. India’s **first railway station** in present-day Bangladesh was established at Jagati, Kushtia in 1862, connecting it to Calcutta. By 1871, the **Gorai Railway Bridge** linked Jagati with the expanding rail network, enabling faster transit and commerce [21]. It was during this era that early industrial ventures such as Renwick & Co., sugar mills, and eventually **Mohini Mill** emerged, shaping the area’s socio-economic landscape [20].

Kushtia earned its reputation as the “**cultural capital of Bangladesh**,” home to a rich legacy of literature, folk music, and communal traditions. From Baul philosophy to the memory of Lalon Fakir and literary giants like Mir Mosharraf Hossain and Kangal Harinath, the region’s identity grew from its social and artistic pulse [20]. Amid its cultural richness, Cassidy continuity existed. Though largely agrarian and Muslim-majority, local social systems retained Hindu administrative influence in professions like law and education. This dichotomy shaped Kushtia’s civic leadership and class structures well into the colonial period.

IV. PROGRAMS

Program Analysis

The program analysis of an abandoned textile mill involves examining the site's potential for adaptive reuse, redevelopment, or preservation. This analysis considers the mill’s historical significance, architectural features, current condition, and possible future uses. The goal is to create a sustainable and functional plan that aligns with community needs, economic viability, and cultural preservation.

Key Aspects of Program Analysis:

1. Historical and Cultural Context:

Significance: Will assess the mill's historical importance, such as its role in local industry or culture.

Legacy Preservation: Will identify elements worth preserving (e.g., unique architecture, machinery, or spaces).

Example: Will retain original brickwork or iconic machinery as part of the design.

2. Site and Structural Assessment:

Physical Condition: Analyze the state of buildings, machinery, and infrastructure.

Safety Concerns: Evaluate risks like structural integrity, contamination, or hazards.

Utilities and Accessibility: Examine existing connections to water, electricity, and transport.

3. Community and Stakeholder Needs:

Community Input: Identify the needs and aspirations of residents and stakeholders.

Potential Uses: Explore uses such as community centers, educational facilities (e.g., museums or skill-training institutes), mixed-use spaces (e.g., housing, retail, and offices), creative hubs (e.g., galleries or event venues) etc.

4. Economic Viability:

Cost Analysis: Estimate costs of renovation, restoration, or demolition.

Revenue Streams: Assess how the project could generate income (e.g., rentals, tourism).

Funding Opportunities: Identify grants, public-private partnerships, or investors.

5. Environmental and Sustainable Practices:

Remediation: Address any environmental issues, such as soil contamination or asbestos.

Sustainability: Incorporate eco-friendly practices like solar energy, rainwater harvesting, or green building techniques.

6. Design Considerations:

The design decisions for the project "Abandoned to Avant-Garde: Mohini Mill Revitalized" would likely focus on transforming a decayed industrial site into a cutting-edge cultural and creative hub.

Functional Zoning: First the project will Plan the layout for proposed uses (e.g., dividing areas for retail, recreation, and education).

Preservation vs. Innovation: Balance retaining historic features with modern adaptations.

Connectivity: Ensure integration with surrounding areas through transport and pathways.

7. Feasibility and Implementation Plan:

Timeline: Will develop a phased implementation schedule.

Regulatory Approvals: Will consider zoning laws, heritage site regulations, and building codes.

Partnerships: This project will try to engage local governments, NGOs, and businesses.

Identification & Analysis of Critical or Repeating Spaces:

The identification and analysis of critical or repeating spaces here in figure 1 refers to the process of recognizing and studying key spaces or locations within specific system, structure & context of the mill that plays a significant role due to its frequent use, functionality, or impact on overall outcomes. This concept is implemented in fields such as architecture, urban planning, systems design, and even literary or cultural analysis. So, here the existing identification & analysis of Mohini Mill is depicted in detail below:



Figure 4: Identification of Different Spaces (By Author 2024)

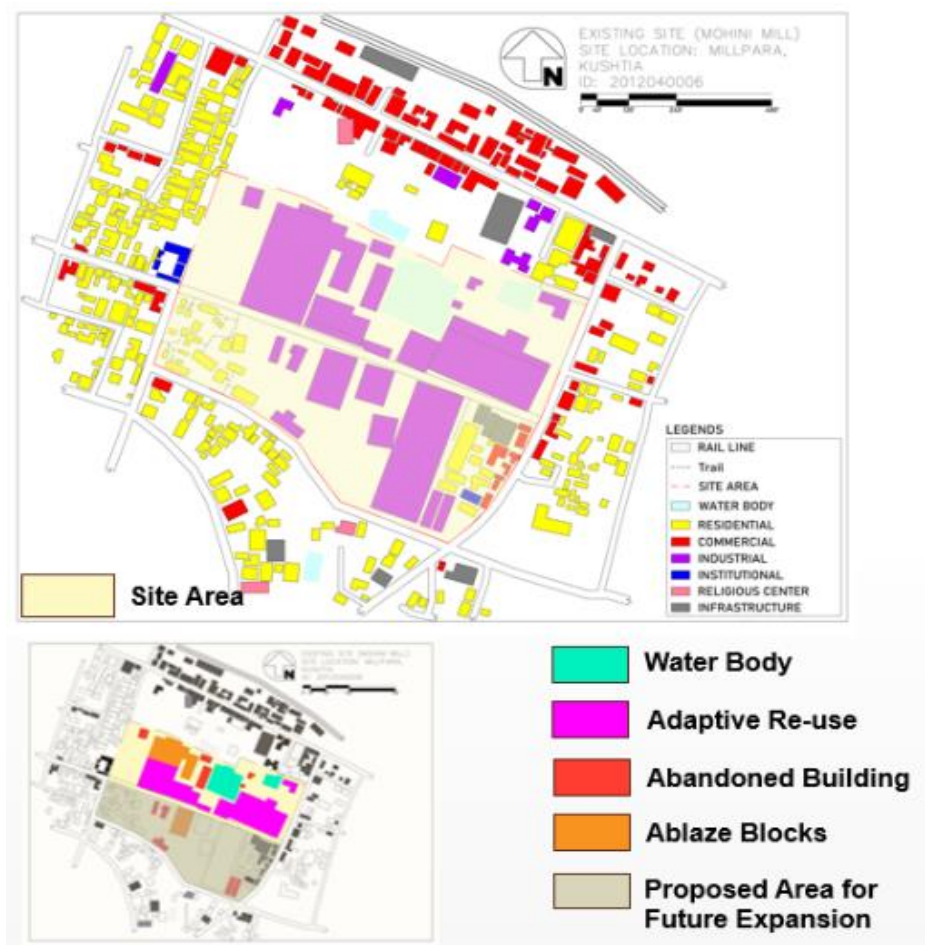


Figure 3: Existing Condition (By Author 2024)

Based on the survey as well referencing from an established research paper all the structures are graded in three categories: A, B & C. Existing conditions of the buildings are stated above on the figure.

Type A: Buildings that could be retained & re-used.

Type B: Structures that could be retained for their ensemble value, contributing to the character of the place.

Type C: Structures that could be demolished.

Moreover, the structural conditions of these buildings have been categorized as follows:

Fair: Structures in sound structural condition.

Moderate: Structures requiring a few localized repairs to make them in fair condition.

Poor: Structures requiring major structural repairs to strengthen them.

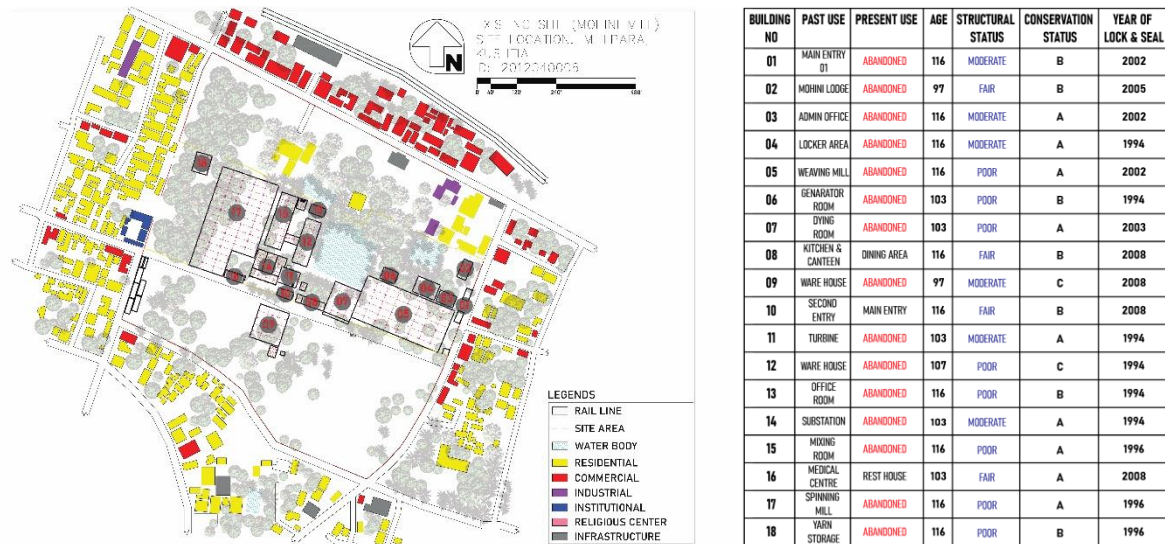


Figure 5: Structural Analysis (By Author 2024)

According to the structural analysis, few buildings are completely burnt and abandoned. Another one is partially burnt and abandoned as well. Two buildings are sealed. For proposal the project will be using 6 major building blocks as few among them few are threat to the site being in a danger situation, this project have a proposal for demolishing few buildings and the remaining buildings beside them are to be demolished for expansion as per figure 3. Hence forward there will be hypothetically considering that the buildings in danger have been demolished, and we will be using that space for redevelopment regarding landscape and parking spaces. Few of the structural elements are either collapsing or on the brink of collapse, requiring urgent attention. Therefore, it is imperative to either reinforce them or replace them with new structural elements. Opting for the latter approach risks compromising the building's structural integrity during the addition and removal of components. Retrofitting, however, offers a solution to maintain the structural integrity of the building while enhancing its strength and stability.

Programme

Revitalizing Mohini Mills in Kushtia requires a thoughtful integration of its historical significance, community needs, and sustainable development goals. So, here the proposed program for revitalization strikes a balance between preserving its heritage and creating spaces for modern utility, economic growth, and cultural enrichment.

Programme Outline

1. Heritage and Cultural Preservation Textile Museum and Heritage Center:

- Preserving key sections of the mill to showcase the history of Mohini Mills, the textile industry in Bengal, and its impact on the community.
- Displaying old machinery, tools, and photographs as exhibits.

Cultural Events and Festivals:

- Hosting annual festivals, art exhibitions, and cultural events that highlight the rich heritage of Kushtia.
- Collaborate with local artists and historians for storytelling sessions and performances.

2. Community-Oriented Spaces Community Center:

- Creating a space for workshops, meetings, and local gatherings.

Educational Facilities:

- Setting up skill-training programs in textile production, weaving, or modern garment technologies.
- Partnering with technical institutes to run courses on design, production, and entrepreneurship.

Recreational Areas:

- Converting parts of the mill into public parks, playgrounds, and open spaces for community use.

3. Economic Development and Job Creation Co-Working Spaces and Incubation Centers:

- Supporting start-ups, especially those in fashion, textiles, and design, by providing affordable workspaces.

Revival of Textile Operations:

- Restarting limited-scale, sustainable textile production focusing on handcrafted fabrics or eco-friendly products.
- Marketing all the products as premium heritage textiles for export and local markets.

Retail and Commercial Spaces:

- Dedicating parts of the property to markets or shops where local artisans and small businesses can sell their products.

4. Tourism Development Hotels or Resorts:

- Repurposing sections of the mill into unique accommodations, combining industrial aesthetics with modern amenities.

Guided Tours:

- Offering guided tours of the mill's preserved sections, showcasing its history and architecture.

Cafes and Restaurants:

- Establishing eateries that reflect the local culture and cuisine, attracting tourists and locals alike.

5. Sustainable Development Green Spaces:

- Rehabilitating unused land within the mill into urban gardens or green belts.

Renewable Energy Integration:

- i. Installing solar panels or small wind turbines to power the revitalized spaces.

Water Conservation:

- i. Implementing systems for rainwater harvesting and water recycling.

6. Art and Creative Spaces Art Studios and Workshops:

- i. Offering spaces for local and international artists to work and conduct classes.

Performance Venues:

- i. Transforming parts of the mill into auditoriums or open-air theaters for music, plays, and cultural performances.

Public Art Installations:

- i. Using the mill’s industrial aesthetic to display sculptures, murals, or light installations.

7. Mixed-Use Development Residential Spaces:

- i. Developing affordable housing for workers, students, or low-income families.

Office Spaces:

- i. Leasing parts of the property to businesses looking for unique industrial-style offices.

Detailed Programme

TABLE 1: PROGRAM LIST

No	Program Name	Area (in sq ft)
01	Textile Heritage Museum	3,06,958
02	Cultural Heritage Park	1,85,652
03	Public Recreation Spaces	93,555
04	Artisan & Craft Hubs	8,300
05	Co-working & Small Business Incubator	15,650
06	Culinary & Artisan Promotion Space	40,935
07	Parking	20,798

As per the given future use of my site here’s a program list. Considering the demographic data there’re also calculated the desired area for each function. The revitalization of Mohini Mills is achieved by implementing a detailed, multi-phase program focusing on heritage conservation, community development, economic growth, and sustainability. Below in figure 4 a comprehensive diagram outlining key components, phases, and objectives for revitalizing the mill:

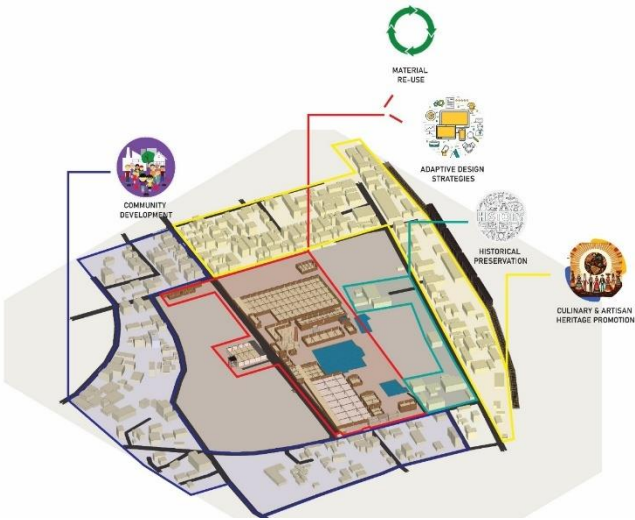


Figure 6: Applied Policies (By Author 2024)

Here on the given figure, I’ve illustrated where exactly all my design proposals will be executed. I’ve not only denoted the 19.79-acre area but also the immediate surrounding of my site too. Now it analyzed all the building blocks as well as the immediate site surrounding here is summarization of the future use of the site from multiple aspects.

TABLE 2: USE OF SITE FROM MULTIPLE ASPECT

Future Use	Reasoning		Remarks
	Pros	Cons	
Historical use	- Heritage preservation - Social esteem	- Restricted financial return - Maintenance cost	Revenue generated due to redevelopment will be less than redevelopment cost
Commercial use	- Economic development - Infrastructure enhancement	- Environmental effect - Gentrification & displacement	Helpful for the community will generate economy, employment opportunities.
Residential use	- Addressing housing demand - Community advancement	- Strain on infrastructure - Gentrification & displacement	Existing structures will be demolished & users will be relocated.

Moreover, I'm introducing the retrofitting method for uplifting the heritage buildings. In most cases, structures are retrofitted to achieve an increase in the strength and/or ductility and stiffness. Possible retrofit measures need to be carefully assessed to ensure that the seismic characteristics of the structure will be improved. Care must be taken to be certain that the retrofit does not simply result in the problem being shifted to other critical regions of the structure. Typical retrofit methods for buildings include:

- Adding new structural steel bracing, either as diagonal bracing within the existing frames or as trusses placed vertically up the structure.
- Adding new reinforced concrete walls, either as in-fills placed within existing frames or as walls placed vertically up the structure.
- Jacketing (encasing) existing elements by new materials.
- Adding base isolation and mechanical energy-dissipating devices.

Retrofitting Methodology

One method of retrofitting to revive this structure involves connecting steel sections to the existing structural members. Various retrofitting techniques for different parts of existing buildings are outlined below:

Material Details: The material that is to be used for the steel joinery is given as below for different structural aspects:

- Channel sections to reinforce the columns of 12" x 12"
- I-sections to strengthen the beams of size 8" x 12"
- Similarly Angle Cleat and Base Plate is to be used at joints for strong connection with sizes 8" x 12" & 12" x 12".

TABLE 3: RETROFITTING METHODOLOGY

Building Element	Material	Retrofitting Methodology
Roof	Concrete & Tin	The original material on the building's roof sustained damage from weather and natural elements. Thus, they need to be replaced with new material.
Column	Steel Sections (C-Sections)	To reinforce: the columns, channel sections (c-section) will be connected to them, forming a box structure around the existing columns. This method aims to enhance strength and structural stability.
Beam	Steel Sections (I-Sections)	To reinforce: the beams, I-sections will be affixed to them, creating a box like structure around the existing: framework to enhance strength and structural stability.
Wall	Brick Walls	The brick "wall" shows sign "of chipping, and the plaster finishes beginning to peel away. It's essential to renovate these areas, preserving original motifs while also constructing new brick walls where needed.

Flooring	Sheets+ Tiling	The original flooring has deteriorated, so to reinforce it, we can lay sheets as a base and add tiles to it for finishing touch.
Door	Wooden Frame	The original doors need to be replaced with new doors while keeping the design and character of the building.
Window	Wooden Frame	The original windows need to be replaced with new windows while keeping the design and character of the building

Programme Flow Diagram

This is a visual representation of the sequential steps, processes, or activities involved in the mill's revitalization process. It is designed to illustrate how tasks flow from one stage to another, providing clarity on the structure, logic, and execution of the program as per the figure.



Figure 7: Program Flow-Diagram (By Author 2024)

Given are the accessibility patterns showing how visitors can access building blocks as per the exposure of the buildings & the following figure depicts the flow diagram that how a visitor will interpret the whole site starting from entry till the exit.

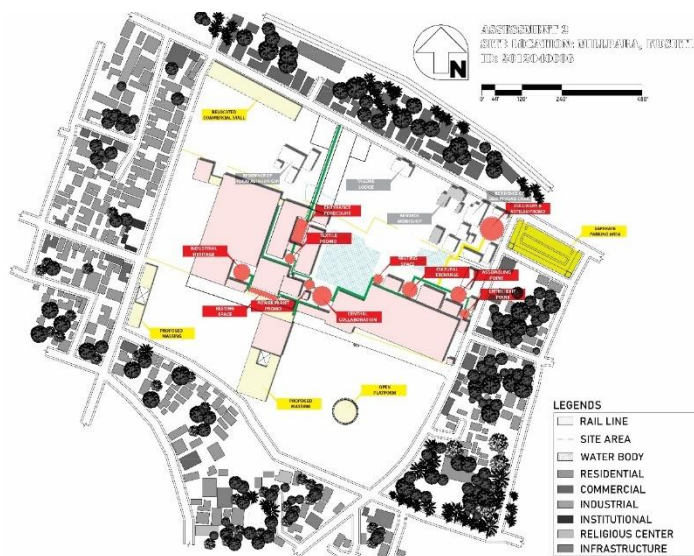


Figure 8: Accessibility Pattern (By Author 2024)

V. MORPHOLOGICAL STUDY OF THE AREA

Road Network & Site Accessibility

There are several types of roads with individual and specific functions.

Primary Road: Within urban boundaries these link traffic from strategic roads to secondary or tertiary roads. They include 'arterial' through routes and mixed-use, multi-functional 'high streets', providing access to properties as well as other amenities. Likely to be public transport routes, they require a careful balance of place and movement when improving or connecting with new development.

Secondary Road: Link multi-functional industrial/commercial premises and associate parking and service areas with secondary or strategic roads. When within urban boundaries some elements of designing streets may be applied, dependent on context and an assessment of future adaptability, but the balance is towards vehicle movement.

Tertiary Road: Provide access to properties and through routes within a residential area. As secondary connectors they are much less likely to be on public transport routes. These solely provide access to properties within a residential area. These tertiary streets could be mews, vessels, or courtyards.

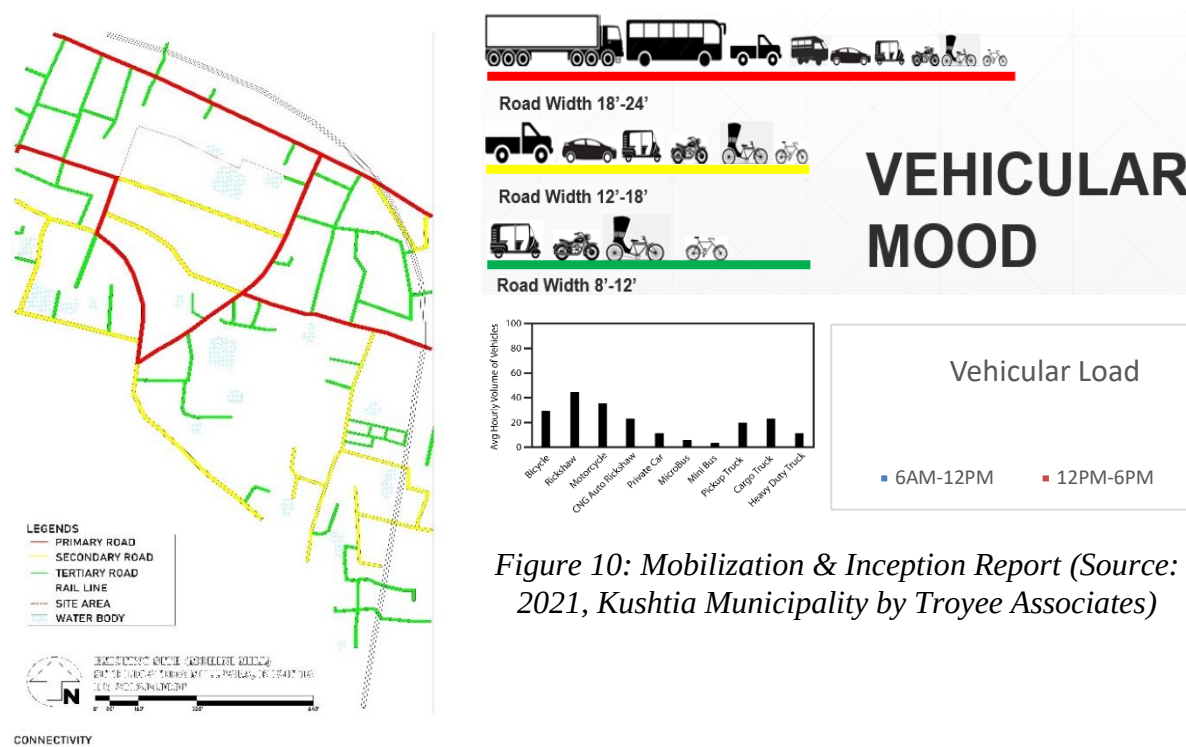


Figure 10: Mobilization & Inception Report (Source: 2021, Kushtia Municipality by Troyee Associates)

Figure 9: Connectivity Maps (By Author 2024)

Context & Surroundings

Proximity to Key Landmarks: Kushtia Railway Station: The mill is located a short distance from the Kushtia Railway Station, which provides vital rail links to other parts of the country, including Dhaka, the capital city.

River: Kushtia is near the Madhumati River, a major geographical feature that influences the region's agriculture, economy, and culture.

Kushtia-Jhenidah Highway: The mill is accessible via the Kushtia-Jhenidah Highway, connecting it to nearby districts and facilitating the movement of goods and people.

Surrounding Area: The surrounding area of Mohini Mill consists of a mix of residential neighborhoods, small businesses, and vacant or underutilized land, a testament to the economic downturn following the mill's closure. However, this also presents opportunities for redevelopment and integration of the mill into a broader urban fabric.

Significance of the Location: The mill's central location in Kushtia town makes it a focal point for potential redevelopment. Its proximity to transport hubs and key commercial areas positions it strategically for transforming into a mixed-use development that could revitalize the local economy, attract tourists, and serve as a community hub. Additionally, the site's historical significance adds cultural value to its redevelopment, making it a key site in Kushtia's urban landscape.

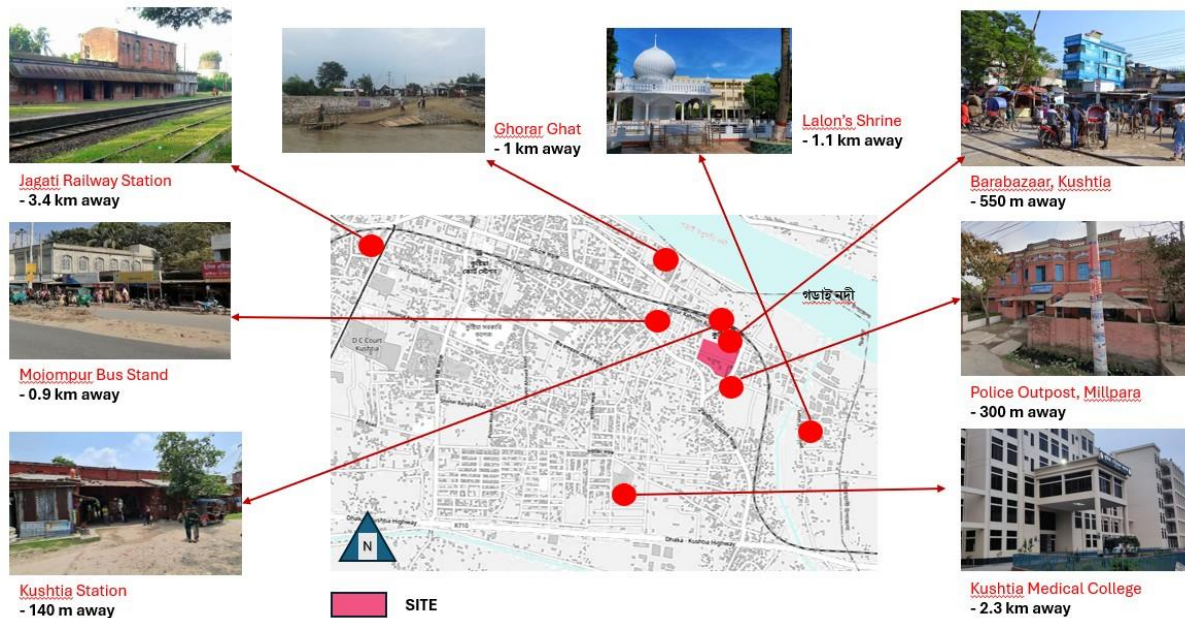


Figure 11: Site Force Diagram (By Author 2024)

SWOT Analysis

The SWOT analysis here helps identify strengths, weaknesses, opportunities, and threats for this project. It's used for strategic planning and to stay ahead of trends. Below, it describes each part of the SWOT framework and shows how to conduct the project's own plans.

Strength

- Kushtia is situated in a strategic location.
- Historic and heritage sites.
- Availability of large undeveloped peripheral areas.
- Large undeveloped land in the city periphery for providing open space recreation.

Weaknesses

- Weak enforcement of land development regulations
- Ineffective implementation of planning schemes & strategic plans.
- Lack of coordination among government agencies.
- Poor solid waste management.
- Narrow roads, lack of alternate and link roads and absence of pedestrian facility.

Opportunity

- Influences its future physical growth.
- Attract tourist interest.
- Implication of new land use policies will cause overspill of population in the periphery and will reduce pressure on housing and services in the core area.
- Threat
- Rapid unplanned development in the flood flow zone.
- Uncontrolled mixed-use development in peripheral areas.
- Rural to Urban Migration resulting informal settlements.
- Disruption of urban economics and living environment arising from persistent shortage of urban infrastructure.

VI. RESULTS AND DISCUSSION

Existing Site Plan

Over time, the mill has ceased operations and many of its structures have fallen into disrepair. Some buildings have been repurposed or occupied by local entities, while others remain abandoned. The site also includes four mosques, four temples, a school, a college, a playground, and a charity hospital.

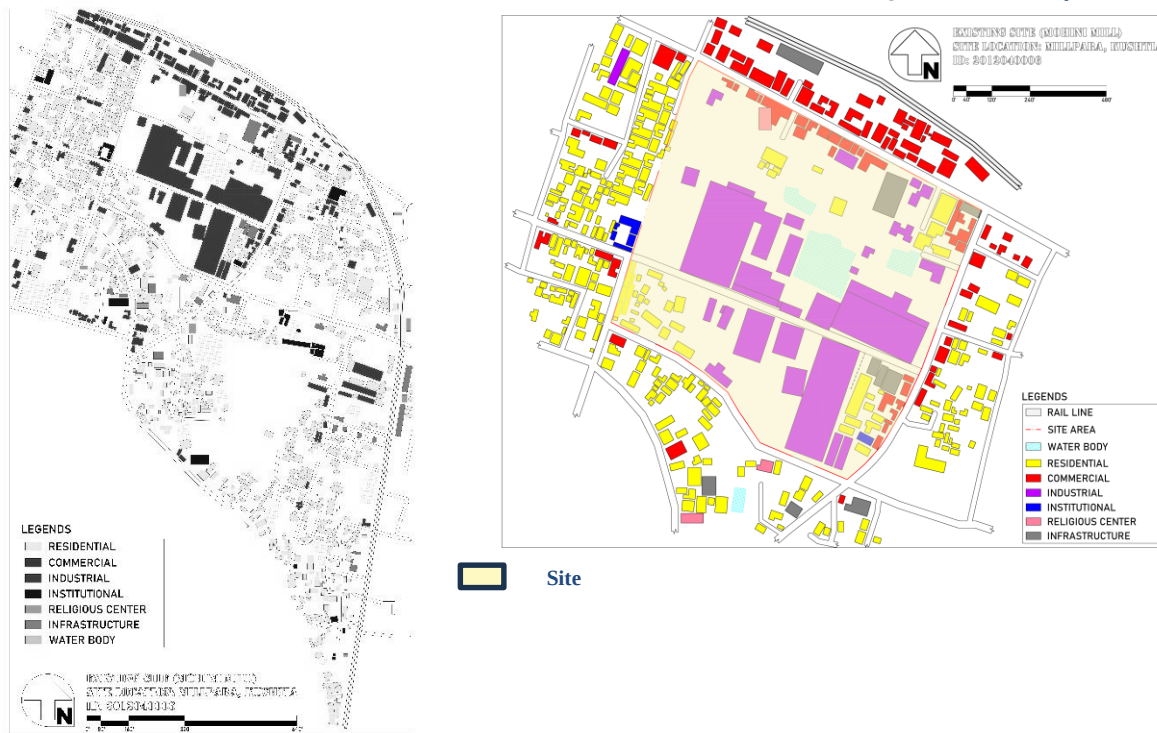


Figure 12: Site Indication (By Author 2024)

Site Section

The site section of Mohini Mill illustrates a vertical cut through the property, showcasing the relationship between various structures and the surrounding landscape. This includes the height and scale of buildings, the spatial arrangement, and the interaction between built and open spaces. Spanning approximately 19.79 acres, the site comprises various structures and open spaces.

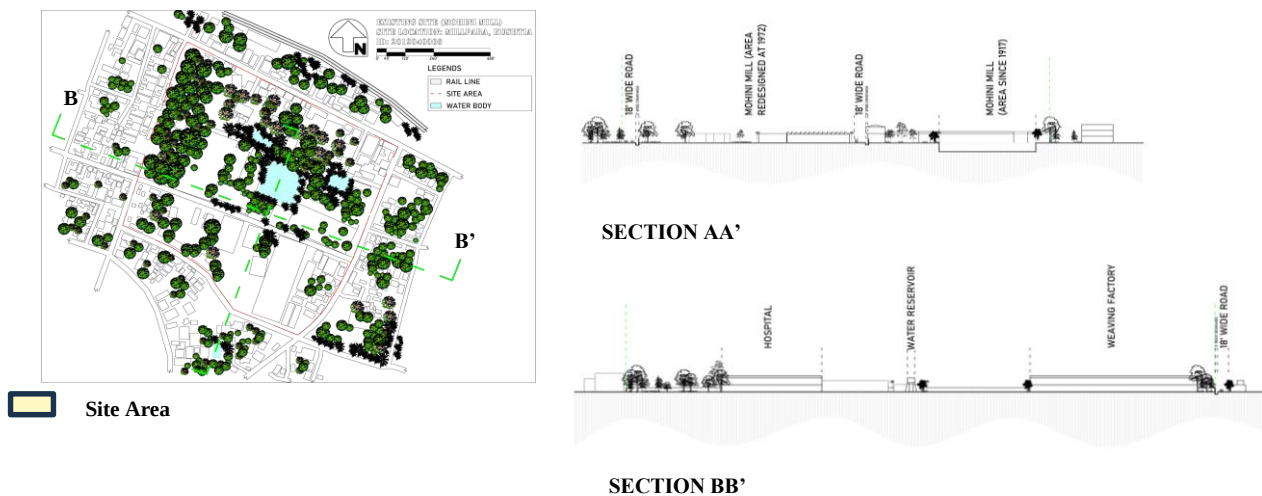


Figure 13: Site Section (By Author 2024)

Other Plans

Understanding the site's layout is crucial for any revitalization efforts. Preserving historically significant structures while adapting them for new uses—such as museums, community centers, or commercial spaces—requires careful planning. Incorporating modern amenities while maintaining the site's heritage can create a vibrant community hub.

Afterwards, demographic data is a critical component of research, particularly in disciplines such as social sciences, public health, urban studies, and market research. A well-defined demographic profile ensures that research findings are not biased or overly generalized. It allows for targeted data segmentation, enabling comparative analysis between different subgroups. This is particularly important in fields such as social sciences, public health, urban planning, and market research, where diverse population dynamics influence outcomes. For instance, a study on urban revitalization would require demographic insights to assess how different communities are affected by redevelopment projects.

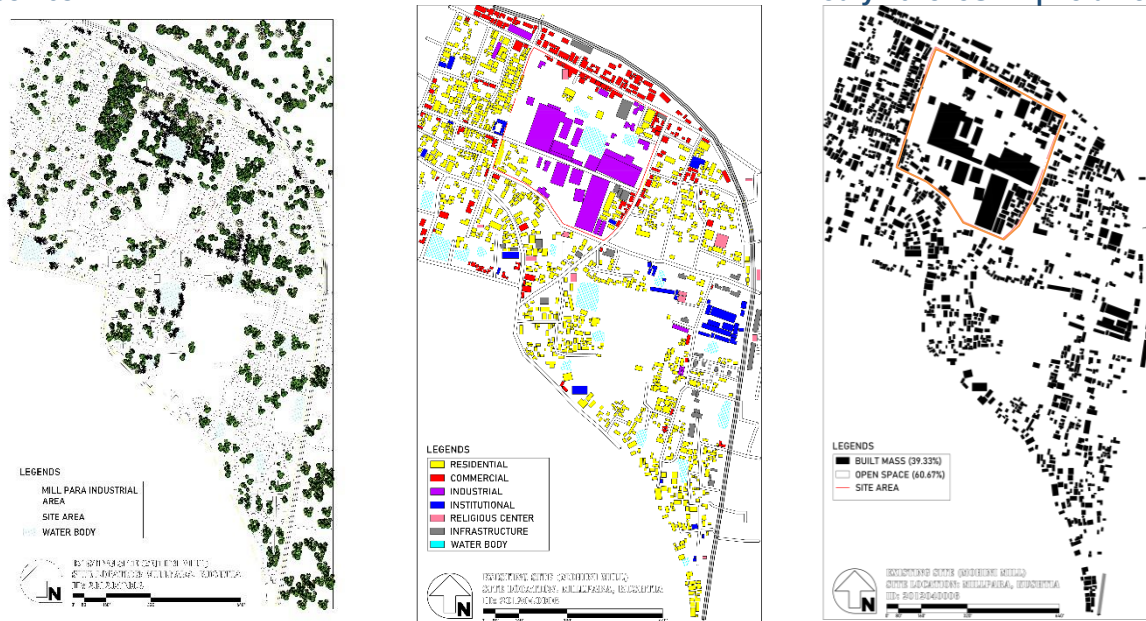


Figure 15: Analytical Maps- Vegetation, land-use, Figure-Ground (By Author 2024)

Moreover, demographic data strengthens a study's credibility by supporting both internal and external validity. It provides a benchmark for comparison with existing studies, ensuring consistency and reliability. Additionally, in policy-oriented research, demographic analysis helps craft targeted recommendations that address the specific needs of different population segments. From an ethical standpoint, demographic inclusion ensures fair representation and prevents research bias. Ignoring demographic factors can lead to skewed conclusions, misinterpretation of trends, and ineffective interventions. Therefore, integrating demographic data into research methodology, results interpretation, and discussion sections is essential for producing meaningful, data-driven, and socially responsible academic work. A precise demographic chart is given in the figure below to understand the site.

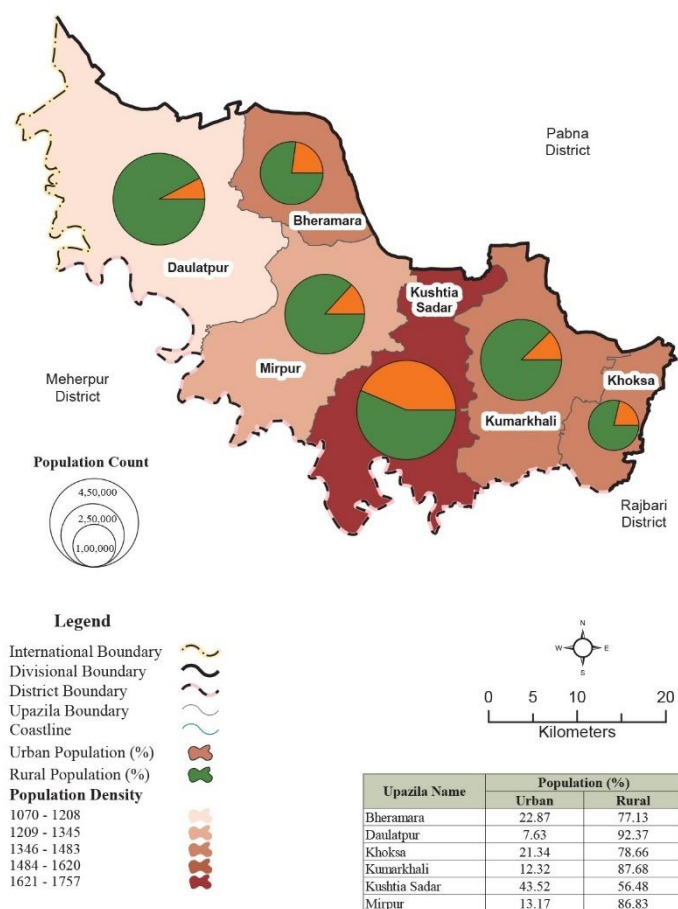


Figure 14: Demographic Data (Source: Mobilization & Inception Report Kushtia, Modified by Author 2024)

Design Decision

Design decisions in architecture encompass functionality, aesthetics, sustainability, and user experience. Architects consider site conditions, climate, materials, and cultural context to create spaces that are both practical and inspiring. Factors like spatial planning, lighting, circulation, and accessibility ensure usability and comfort. Sustainability influences choices in energy efficiency, material sourcing, and environmental impact. Demographic and social factors guide inclusiveness and shaping spaces to meet diverse community needs. Whether designing a home, public space, or adaptive reuse project, every decision—from structural integrity to visual appeals to balance innovation with practicality, creating meaningful, enduring, and contextually responsive built environments.

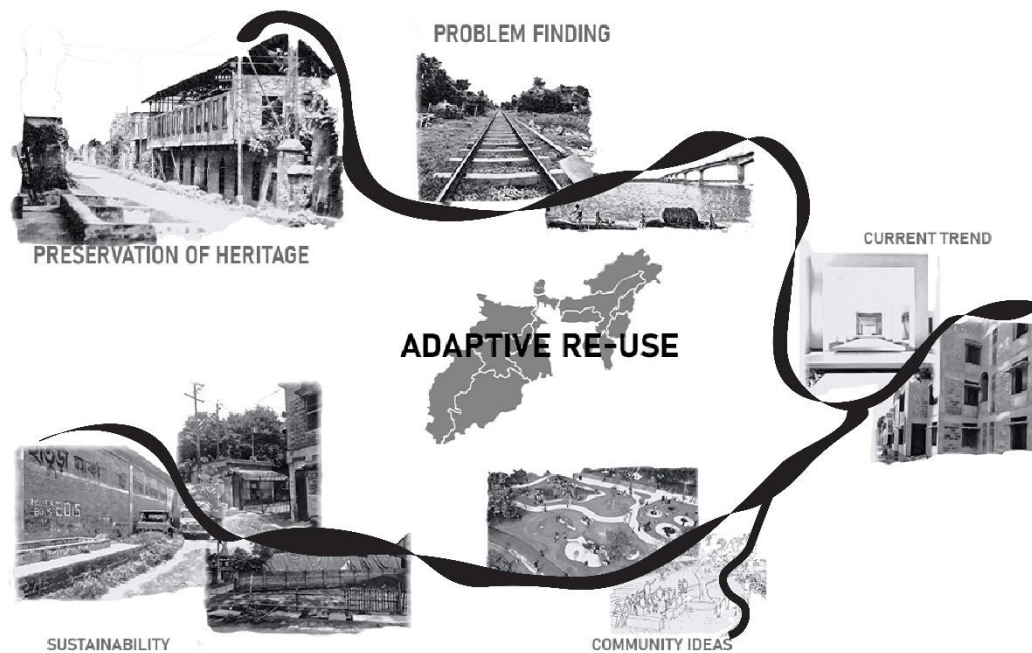


Figure 16: Design Decision (By Author 2024)

Existing Situations

While holding a distinct position in the urban memory of the city of Kushtia along the heritage, the existing conditions of the building and structure are unable to respond to the needs of a new scenario.

Restoration / Innovation / Repurpose

Through the lens of adaptive reuse, the design for the textile foundry preserves the character of time and place by maintaining elements of the original design and structure. At the same time, through the use technological and design innovations, changes in demand and technology are accommodated, thus repurposing the building program for more integrated public use.

Redefinition

The building sits along the bazar with one facade facing the public identity of the community and the opposite facade facing the commercial identity of Kushtia. The mill will redefine a unique identity to the building through the new creation in which much stronger communication between the local user and city is established.

Visual & Tactile Awareness

With porosity, permeability, and connectivity in mind, the use of facades, responsive roof, along with a small gathering-like space at the ground level facing the waterfront, each idea of the innovation center creates a sense of visual and tactile awareness of the sunlight and heritage views.

Zoning

Zoning in an urban project refers to the regulation of land use, dividing a city into designated areas for specific purposes such as residential, commercial, industrial, and recreational spaces. It controls building height, density, setbacks, and land coverage to ensure organized development and prevent conflicts between different land uses. Zoning promotes sustainability, efficient infrastructure, and balanced urban growth. It also influences transportation networks, green spaces, and public amenities. Modern zoning approaches, such as mixed-use zoning and smart growth strategies, focus on creating walkable, livable cities that enhance community interaction while addressing environmental and economic considerations in urban planning.

6 Zones in Total

Creating policies for the elected urban area with historical significance requires a balance between preserving its heritage and facilitating modern urban development. According to the six designated zones proposed there're also certain policies for them. These policies aim to strike a balance between protecting the cultural heritage and ensuring that the urban area remains functional and livable for future generations.

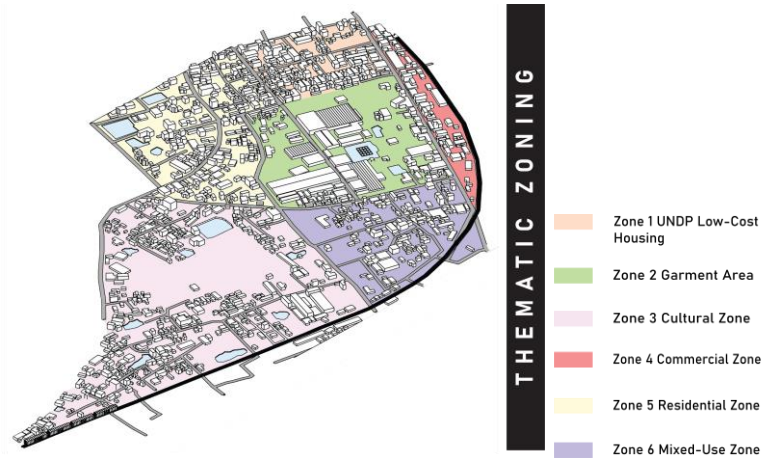


Figure 17: Thematic Zoning (By Author 2024)

After setting up 6 zones, the project comes up in certain phases. Phasing is the step-by-step implementation of an urban development project after zoning regulations have been established. It ensures that large-scale developments are executed gradually and efficiently, considering infrastructure, budget, and community impact.

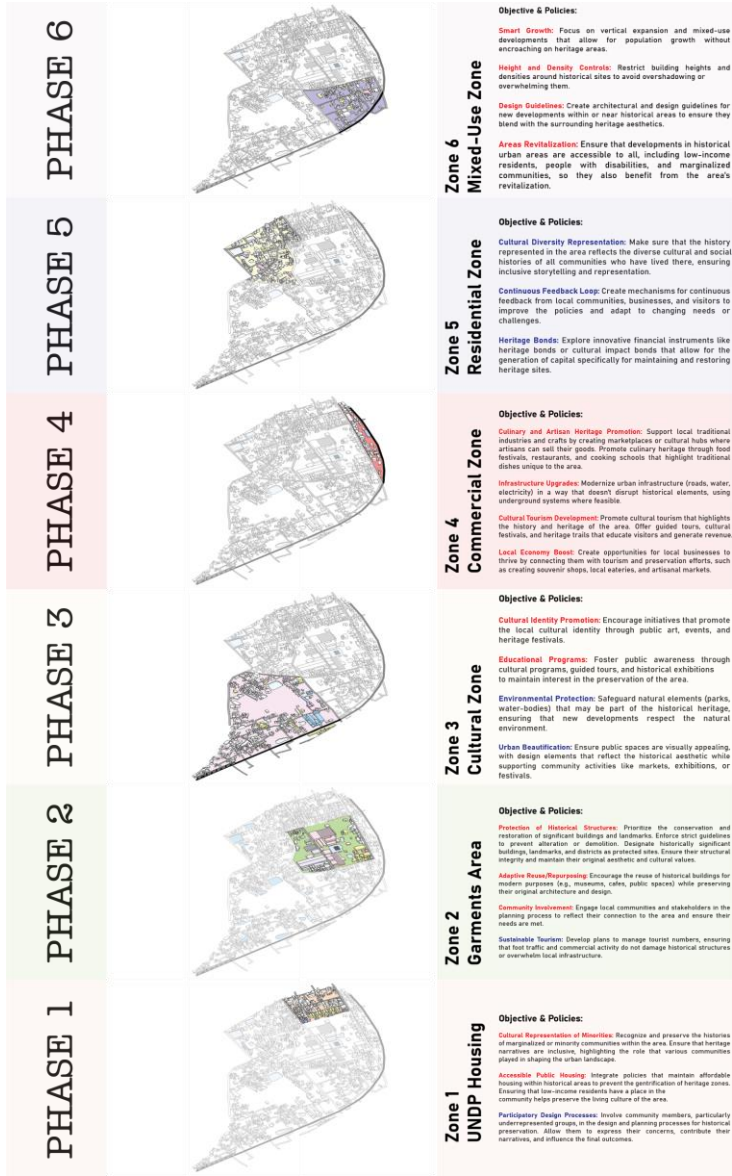


Figure 18: Phasing Diagram (By Author 2024)

PROJECT STRATEGY

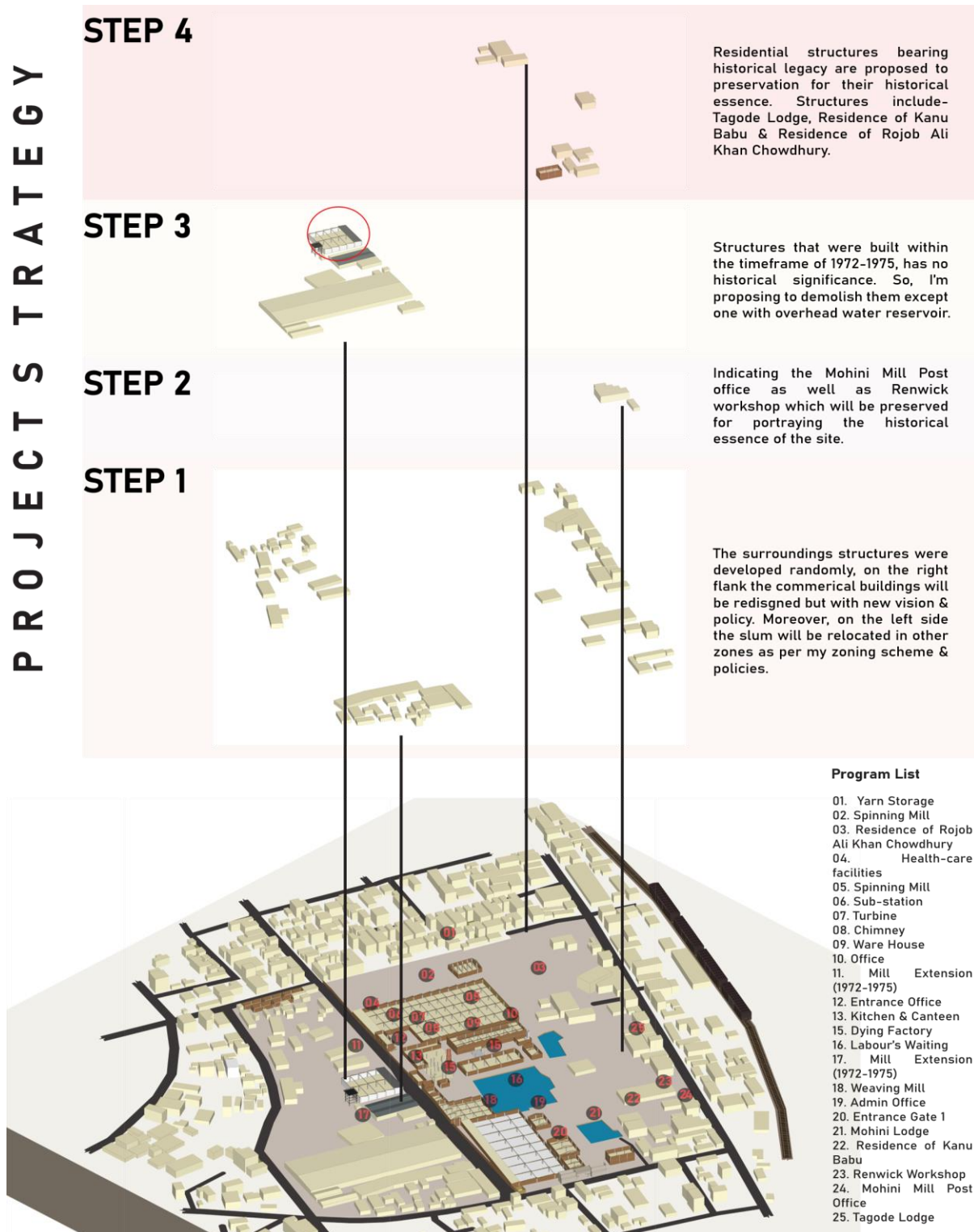


Figure 19: Existing Condition (By Author)

The above given figure shows the existing condition of the garment area (19.79 acre). Currently, there're many temporary as well as illegal structures settled within the site boundary, here through this diagram it is illustrated that this project obtained the 19.79-acre site. Finally, the site obtained is shown below in the given diagram-

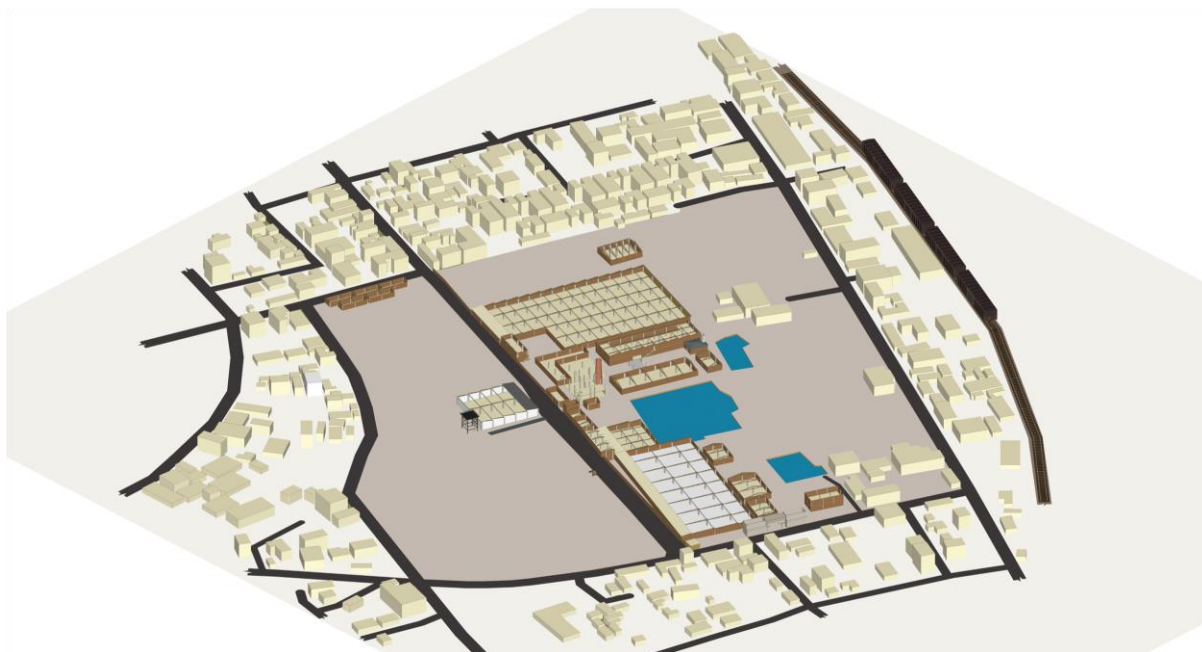


Figure 20: Site having all the bold structures fit & suitable for adaptive reuse. (By Author 2024)

The given figure shows several types of adaptive reuse.

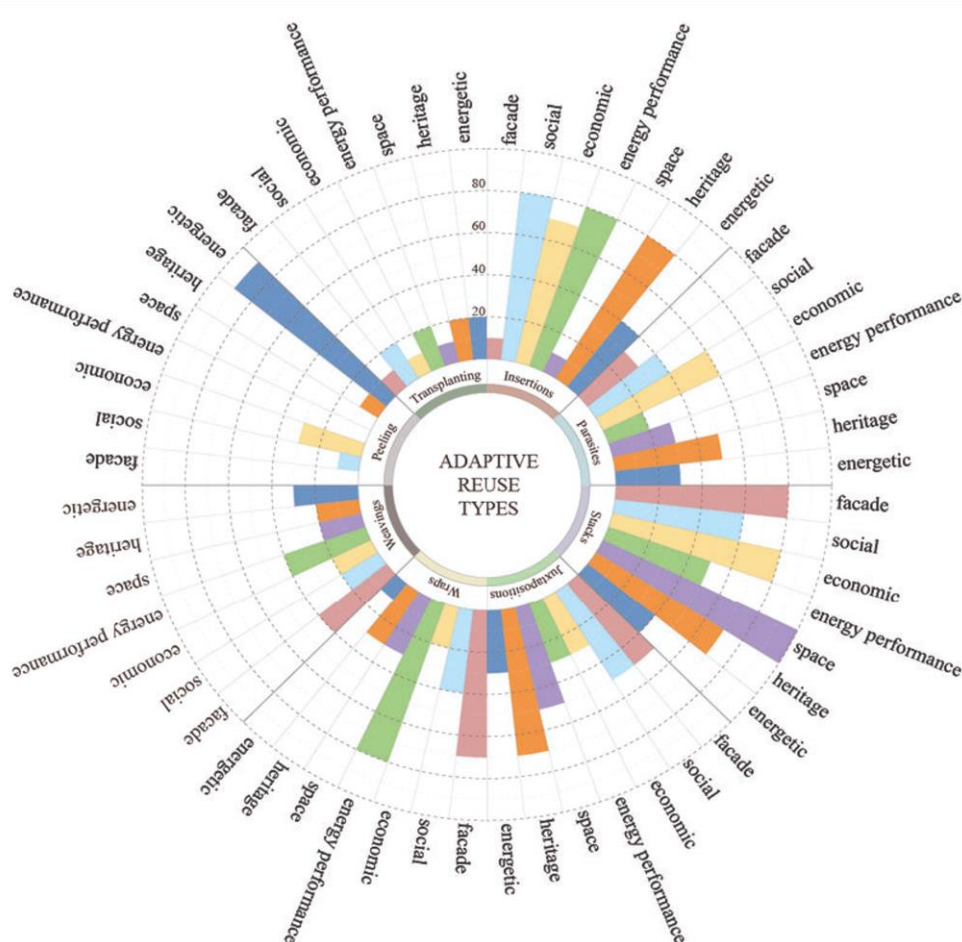


Figure 21: Adaptive Re-use Types (By Author 2024)

There're certain design techniques for repurposing or interventions as well.

Concept & Derived Idea

The Textile Foundry

This name combines the historical element of a textile factory with the creative, transformative e of a foundry. It evokes a sense of craftsmanship and production with a modern twist. As the design idea is way more contemporary therefore modern & minimalistic approach is undertaken for the expression of the project as per depiction in the given figure 33. The site has certain difficulties of its own. Though this projects focus is Mohini Mill still there're certain buildings which have past legacies of their own. So, the site geometry here is also a big concern.

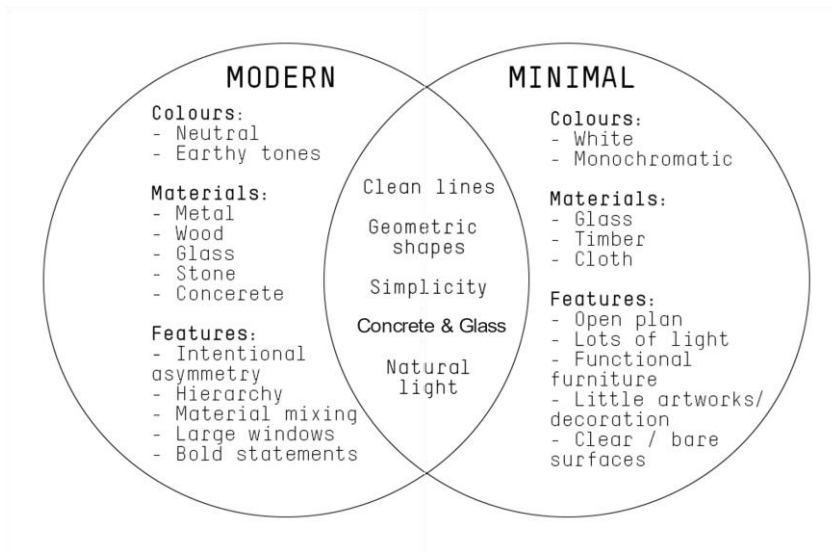


Figure 22: Design Approach (By Author 2024)

The main axial geometry is there respecting the building of Mohini Mill as well as the nearby Gorai River formerly known as "Mohumati". A schematic has been developed first depending upon the initial thinking.



Figure 23: Site Geometry (By Author 2024)

There is also a schematic zoning of proposed development.

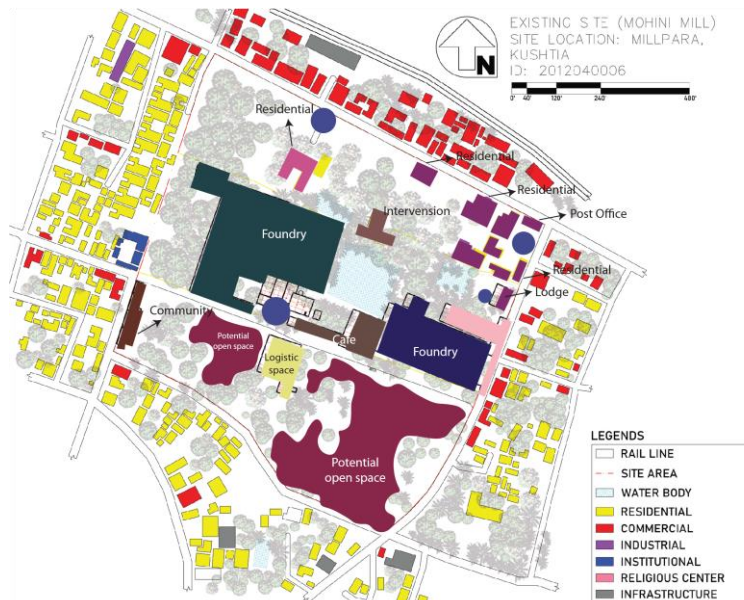


Figure 24: Schematic Zoning (By Author 2024)

Proposed Site Plan

The master plan reimagines the abandoned Mohini Mill as a vibrant, multifunctional urban destination that blends history with innovation. Through adaptive reuse, sustainable design, and thoughtful urban planning, the project transforms the neglected site into a thriving community hub. It incorporates green spaces, cultural facilities, recreational areas, and mixed-use developments to promote social interaction and economic revitalization. Heritage structures are restored and repurposed, preserving the site's historic essence while integrating modern functionality. By reconnecting the site with its urban surroundings and fostering inclusivity, the project redefines Mohini Mill as a landmark of progress, sustainability, and community-driven transformation.



Figure 25: Proposed Site Plan (By Author 2024)

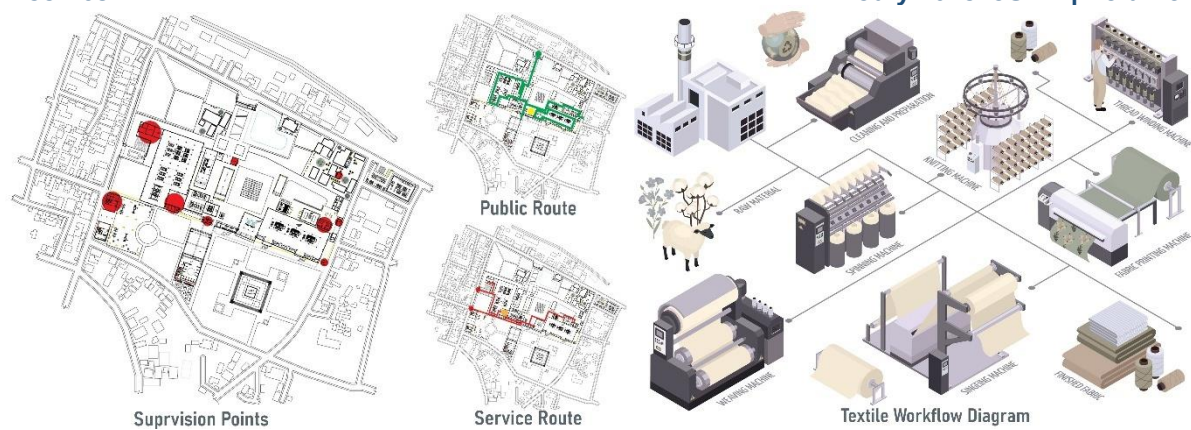


Figure 26: Workflow Diagram (By Author 2024)

Proposed Ground Floor Plan

The proposed ground floor plan illustrates the layout, spatial organization, and functional zoning of the ground level. Serving as the key design proposal, it demonstrates how the space will be used and experienced by its users.



Figure 27: Proposed Ground Floor Plan (By Author 2024)

Other Detail Drawing

In these given figures, the proposal has been illustrated thoroughly to understand the functions easily. The sectional perspectives combine the concept of the building section with a three-dimensional perspective. It shows a vertical cut through a structure, revealing internal spaces, structural elements, and spatial relationships in depth. This view helps visualize the interior organization and overall design concept.

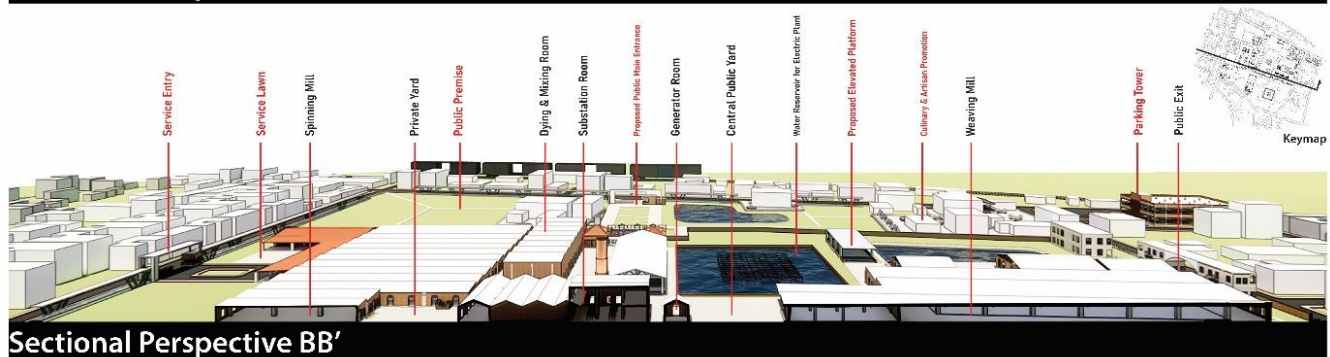
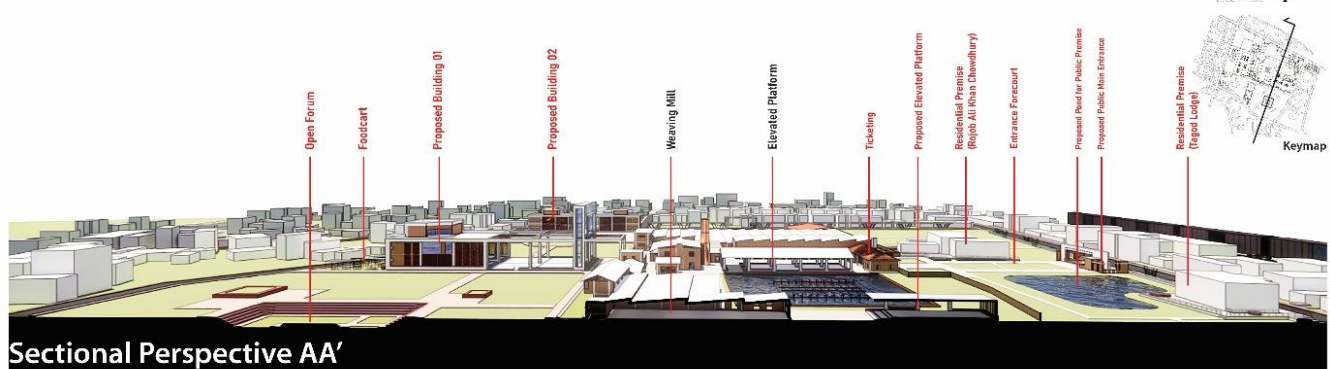
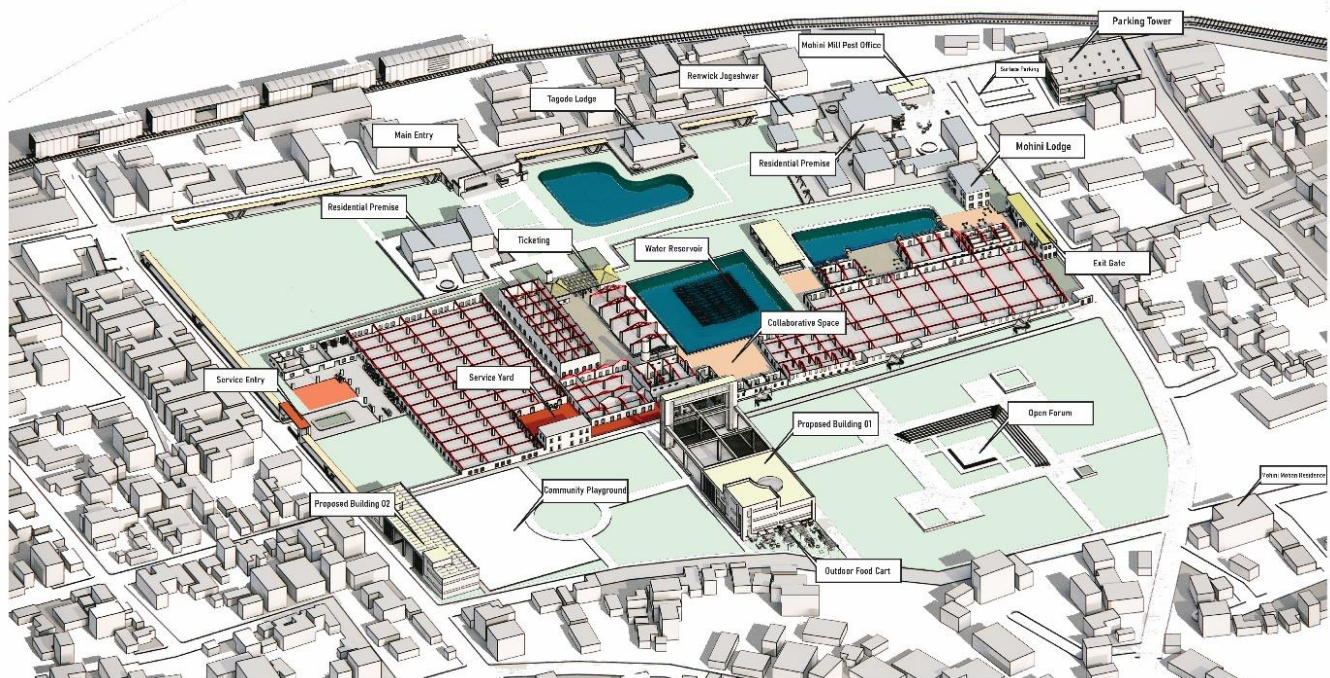


Figure 28: Axonometric View & Sectional Perspective (By Author 2024)

Main Entrance

The main entrance serves as a symbolic gateway between industrial heritage and contemporary innovation. Designed to preserve the site's historical essence while embracing modern aesthetics, it features adaptive reuse elements, inviting forecourt, and dynamic lighting. Blending raw industrial textures with avant-garde architectural interventions, the entrance seamlessly guides visitors into a transformed creative hub.

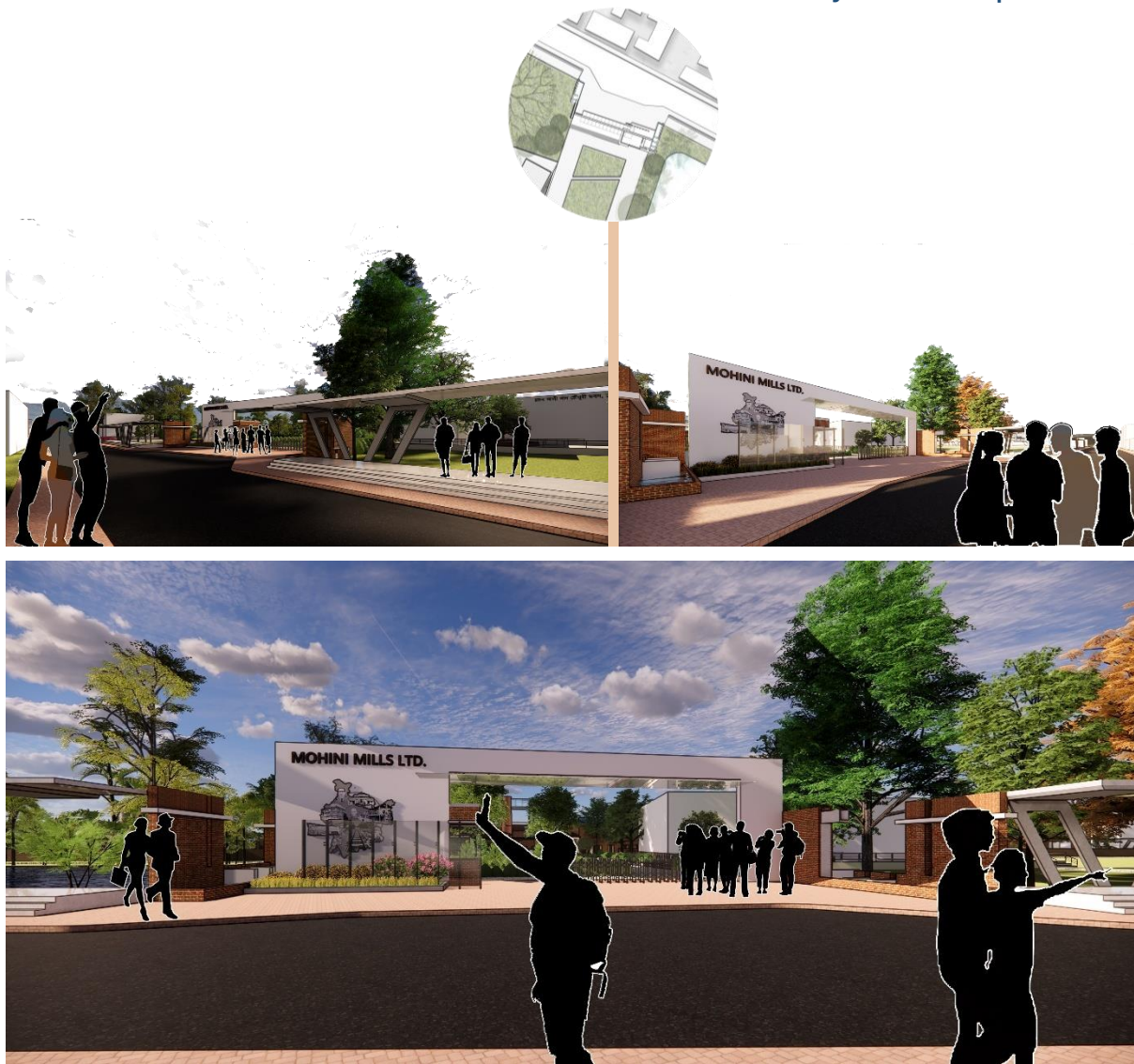


Figure 29: Main Entrance (By Author 2024)

Entrance Forecourt

The entrance forecourt here serves as a dynamic threshold, blending industrial heritage with contemporary design. Retaining original textures while introducing modern paving, seating, and landscape elements, it creates an inviting, multifunctional space. The forecourt fosters community engagement, guiding visitors into a transformed cultural and creative hub.

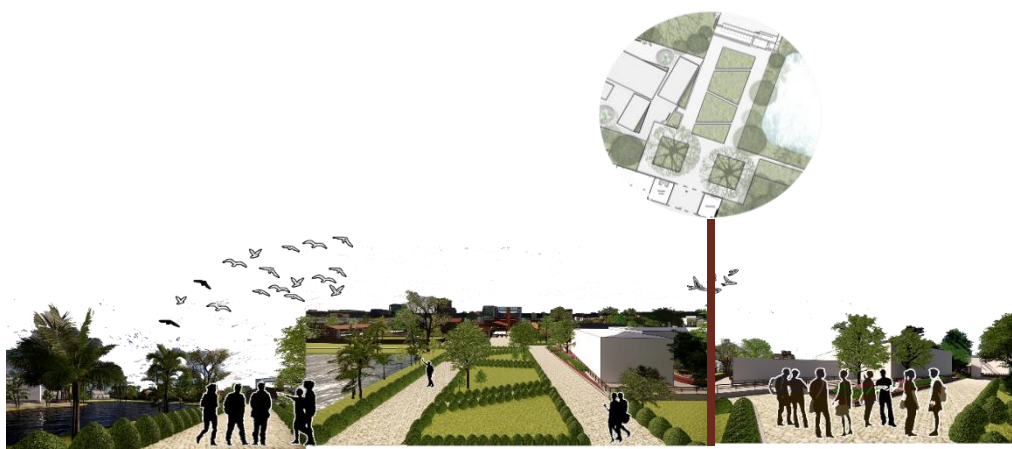


Figure 30: Entrance Forecourt (by Author 2024)

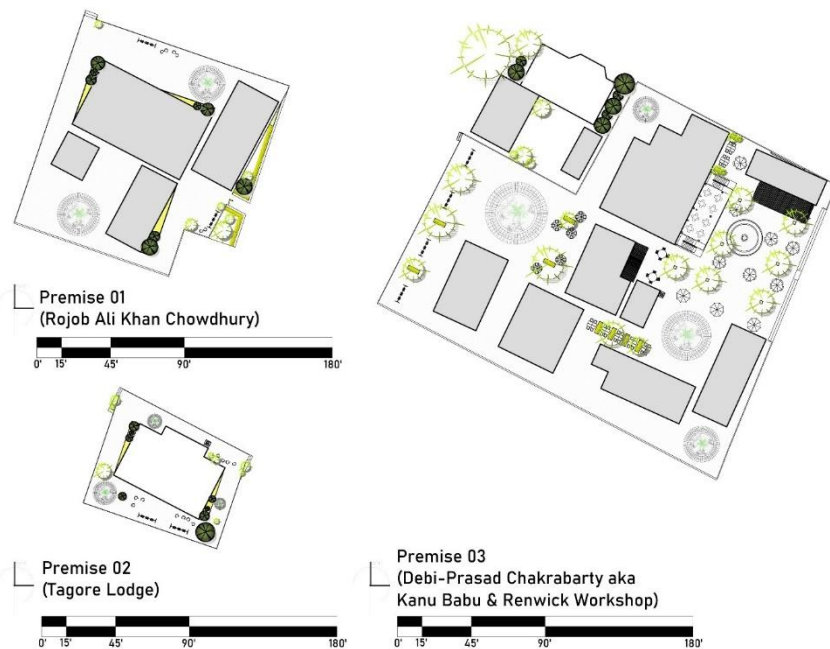


Figure 31: Blowup Plan (By Author 2024)



Figure 33: Culinary & Artisan Heritage Promotion (By Author 2024)

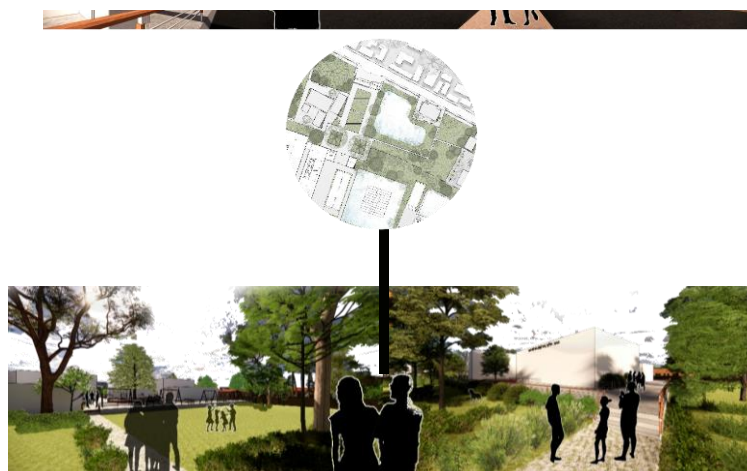


Figure 32: Residential Premises (By Author 2024)

Culinary & Artisan Heritage Promotion

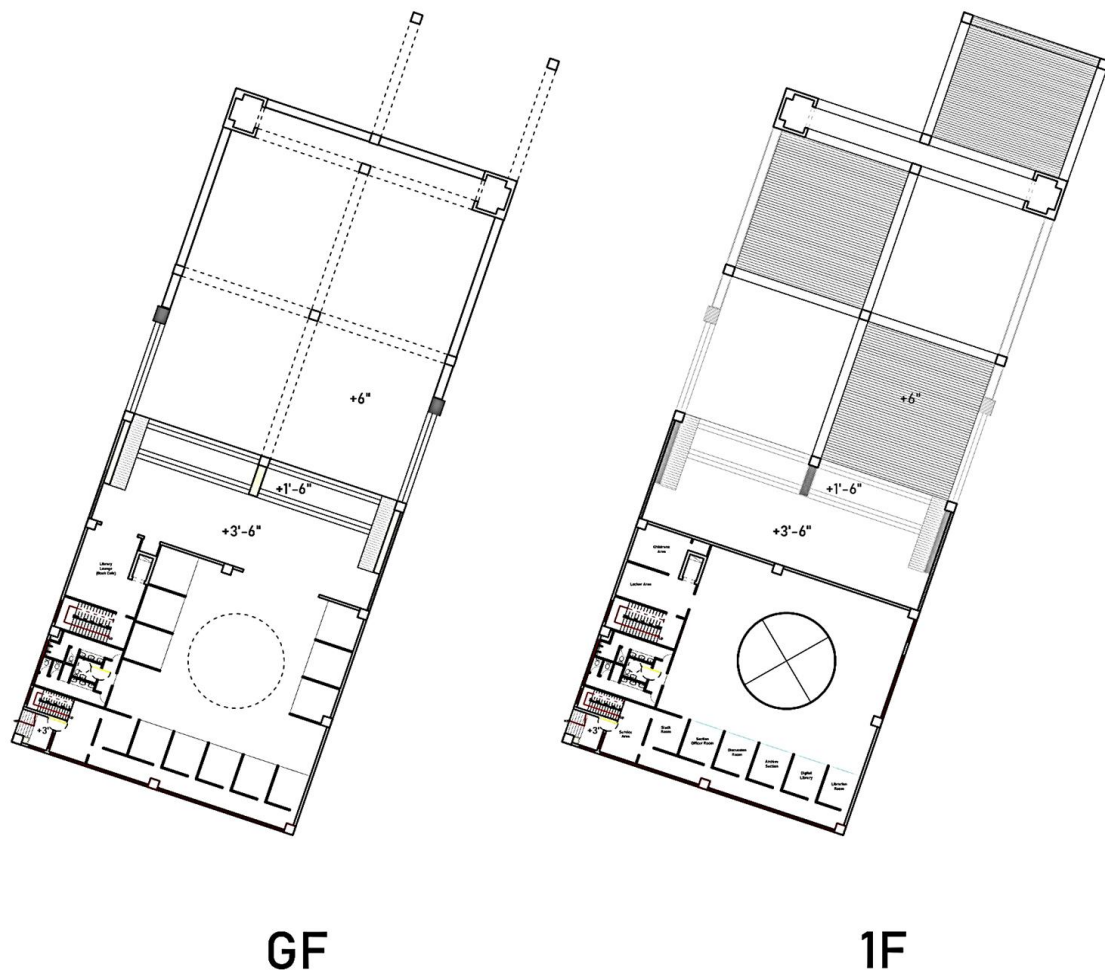
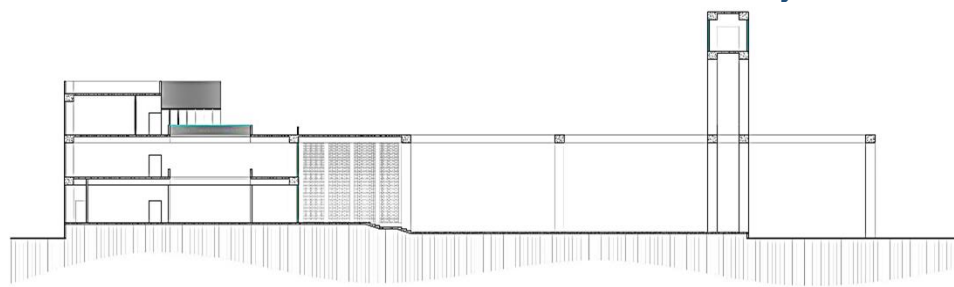
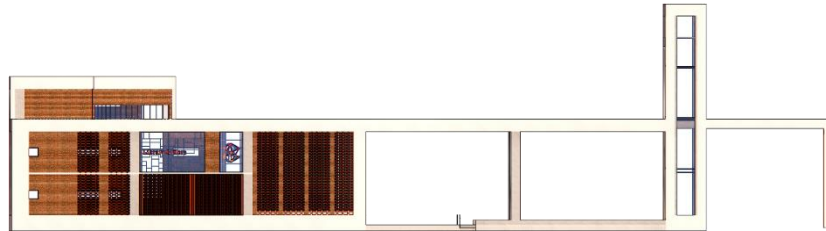


Figure 34: Blowup Plan (By Author 2024)

**Section***Figure 35: Section, Elevation and 3D Visualization (By Author 2024)*

Proposed Building 02

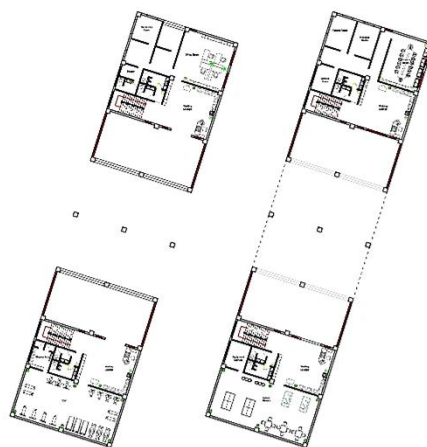
**GF****1F***Figure 36: Blowup Plan (By Author 2024)*



Figure 37: Section, Elevation and 3D Visualization (By Author 2024)

Parking Zone



Figure 38: Blowup Plan (By Author 2024)



Figure 39: Parking 3D Visualization (By Author 2024)

Weaving Mill & Dying Room

The Weaving Mill & Dyeing Area showcases artisans working on a central elevated stage, emphasizing traditional craftsmanship. Visitors circulate around the stage, observing intricate weaving and dyeing processes. This interactive layout fosters appreciation for textile heritage, blending industrial functionality with educational engagement in the revitalized Mohini Mill environment.



Figure 40: Blowup Plan (By Author 2024)

Spinning & Mixing Mill

The Spinning & Mixing Mill features a central elevated stage where workers demonstrate traditional techniques, highlighting the craft's authenticity. Surrounding walkways allow visitors to observe the process up close, fostering an interactive experience. This design celebrates industrial heritage while promoting transparency, skill appreciation, and community engagement within the revitalized space.

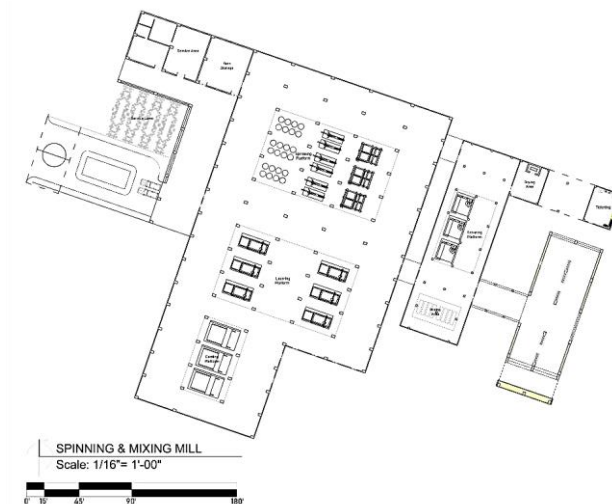


Figure 41: Blowup Plan (By Author 2024)

Exhibition Room

The exhibition room serves as a dynamic space showcasing the site's industrial heritage and contemporary creativity. Blending raw brick walls with adaptive lighting and modular displays, it accommodates diverse exhibitions, fostering an immersive experience that connects history, art, and avant-garde innovation in a revitalized setting.

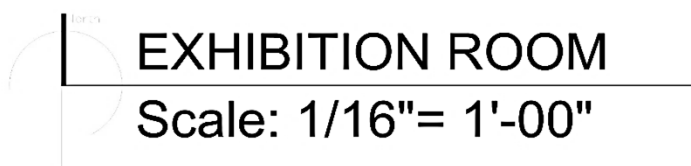
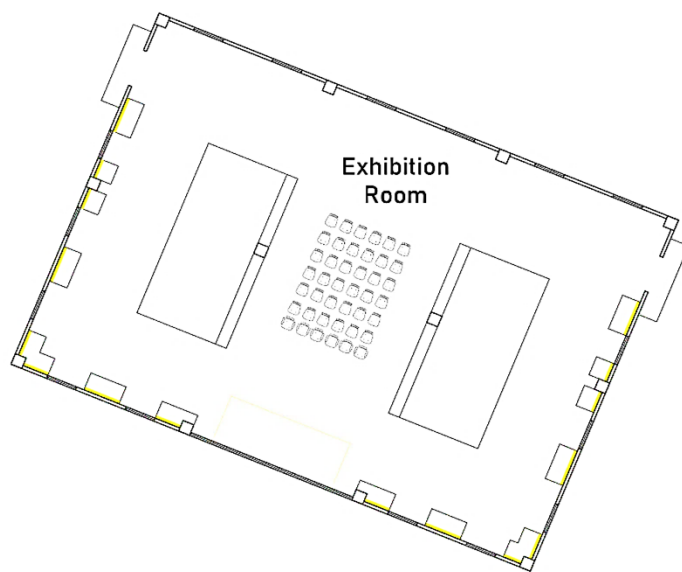


Figure 42: Blowup Plan (By Author 2024)

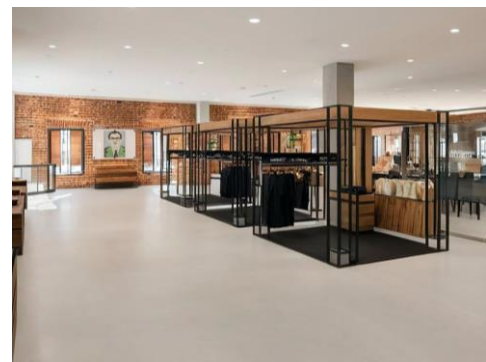


Figure 43: 3D Visualization (By Author 2024)

Service Entry & Service Yard

In the revitalization of Mohini Mill, efficient service access is crucial for seamless operations while maintaining the site's aesthetic and functional integrity. The service entry as well as yard is strategically placed at the west of the site, ensuring minimal disruption to public areas. The service yard is designed as a well-organized, screened area that accommodates storage, loading docks, and utility spaces. Adaptive reuse principles guide its layout, preserving industrial elements while integrating modern logistical solutions.

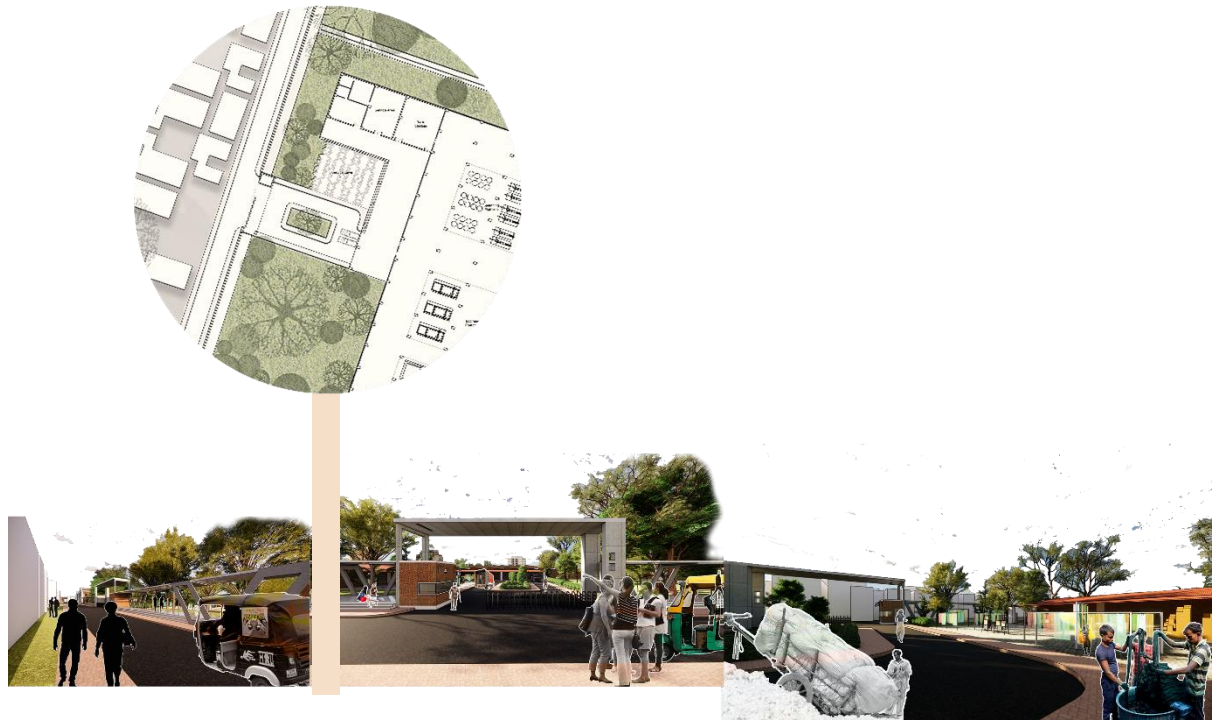


Figure 44: Peripheral Road beside Service Road, Service Entry, Service Yard (By Author 2024)

Legacy Vehicle Exhibit



Figure 45: Before & After Comparison of Legacy Vehicle Exhibit (By Author 2024)

The Legacy Vehicle Exhibit showcases historic vehicles that reflect the industrial and transportation heritage of Mohini Mill's era. Positioned within the revitalized space, it celebrates the evolution of mobility, connecting past and present. This exhibit enhances the site's narrative, offering visitors a nostalgic glimpse into automotive history.

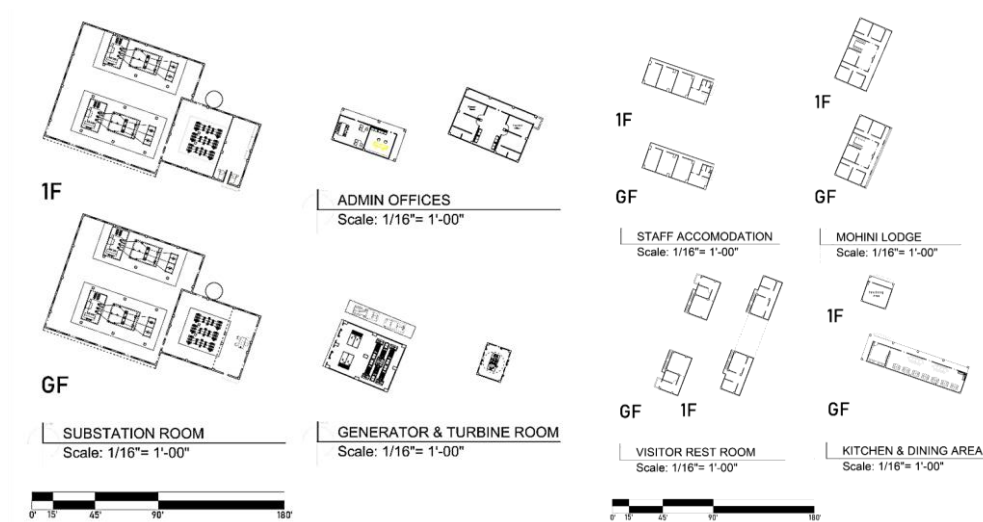


Figure 46: Blowup Plan (By Author 2024)

Other Spaces Within the Mill



Figure 48: Seating Area & A Sculpture of Kanu Babu (By Author 2024)



Figure 47: Reshaped Waterbody & Its Surrounding (By Author 2024)



Figure 50: Community Playground (By Author 2024)



Figure 49: Open Forum (By Author 2024)

Before/ After Comparison

Aerial View

Aerial comparison of Mohini Mill showcases its transformation from an abandoned industrial site to a dynamic urban hub. The revitalized landscape reflects sustainable design, adaptive reuse, and community-focused spaces, breathing new life into the forgotten mill while preserving its historical essence and fostering vibrant, connected environments for future generations.



Figure 51: Before/ After Comparison (By Author 2024)

Heritage Archive Wall

The Ancestral Archive Wall embodies Mohini Mill's rich history, showcasing archival photos, artifacts, and structural remnants. It serves as a narrative canvas, honoring the mill's industrial past while connecting generations through stories, materials, and memories. This wall bridges heritage with modernity, anchoring the revitalized space in its historical roots.



Figure 52: Before/ After Comparison (By Author 2024)

Patio

This Patio offers a transitional open-air space that blends industrial heritage with modern leisure. Surrounded by revitalized structures, it serves as a communal gathering spot for relaxation, social interaction, and events, enhancing connectivity between indoor and outdoor environments within the mill's dynamic urban landscape.



Figure 53: Before/ After Comparison (By Author 2024)

Open Forum

The Open Forum at Mohini Mill serves as an inclusive public space for dialogue, cultural exchange, and community engagement. Designed to foster interaction, it hosts events, discussions, and performances, encouraging diverse voices and ideas. This dynamic space bridges the mill's industrial past with its contemporary, community-driven future.



Figure 54: Before/ After Comparison (By Author 2024)

Mohini Lodge

The Mohini Lodge serves as a restored heritage structure within the revitalized mill complex, previously offered accommodation infused with historical charm. Blending industrial aesthetics with modern comforts, earlier it provided a unique staying experience. The lodge connects visitors to the site's rich past while supporting cultural tourism and community engagement.



Figure 55: Before/ After Comparison (By Author 2024)

VII. CONCLUSION

The revitalization of Mohini Mills represents a transformative journey from neglect to a thriving symbol of heritage and innovation. Once a bustling textile hub, the mill faced decades of abandonment, reflecting the decline of industrial operations and the fading of a cultural landmark. Today, its restoration stands as a testament to the power of adaptive reuse, sustainable development, and community engagement.

At the core of this revitalization project is the harmonious blend of preserving history and embracing modern functionality. The original architecture of the mill has been respectfully conserved, maintaining its historical significance while adapting it for contemporary uses. The inclusion of spaces for art galleries, artisan workshops, and community centers breathes new life into the site, fostering creativity and social interaction. The development of tourism-centric features like museums and cultural festivals positions Mohini Mills as a landmark destination in Kushtia, drawing visitors from near and far. Economic revitalization is another cornerstone of the project. By integrating small-scale sustainable textile operations and skill development centers, the project provides employment opportunities and stimulates local industry. These initiatives create a self-sustaining ecosystem, empowering the surrounding community while honoring the mill's historical purpose. The project also underscores a commitment to environmental stewardship. Green spaces, solar energy integration, and sustainable building practices ensure that the mill's legacy is one of environmental responsibilities. This approach not only addresses contemporary challenges but also aligns with global sustainability goals.

The transformation of Mohini Mills into an avant-garde hub exemplifies the potential of innovative revitalization projects to bridge the past and the future. It shows how heritage sites can be preserved while serving as dynamic spaces for culture, commerce, and community. As Mohini Mills reclaims its place as a beacon of progress, it inspires a broader movement to reimagine and repurpose abandoned spaces worldwide, turning them into vibrant contributors to society once more.

VIII. ACKNOWLEDGEMENT

Rezwana Ahmed Sami thanks Architect Shah Md. Hasin Shad for his thoughtful guidance, constructive feedback, and consistent encouragement throughout the development of this research. His insights on architectural transformation and contextual sensitivity were instrumental in shaping the direction of this study. This research was supported in part by the Department of Architecture at Leading University, Sylhet. The author acknowledges the faculty members for fostering an environment of critical inquiry and academic growth. Sincere appreciation is extended to the local administration of Kushtia and the individuals connected to the Mohini Mill site, whose cooperation and shared memories enriched the research with grounded understanding and historical context. The author also acknowledges the valuable discussions and support received from fellow researchers and colleagues during various phases of this work. Finally, deep gratitude goes to his family for their unwavering emotional support, patience, and belief in the vision of this project.

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