Reshaping Urban Dynamics: Architectural Interventions for Rejuvenating Machhabhaudi's Economic and Cultural Landscape

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Abstract

This research focuses on revitalizing Machhabhaudi, a historically significant area once thriving with economic activities, through a comprehensive architectural intervention. Focusing on the intersection of economic revitalization and cultural preservation, the study delves deeper into the challenges faced by Machhabhaudi and proposes innovative strategies for sustainable urban regeneration. The proposed design solutions resonate like a melody, harmonizing market regeneration to rekindle economic vibrancy, cultural revival to breathe life into forgotten traditions, and community spaces to nurture social bonds. In essence, our journey is a testament to the profound transformation that extends beyond architectural interventions—it's about restoring vibrancy, opportunity, and enduring community ties.

Keywords

Revitalization, Urban Regeneration, Architecture Regeneration, Culture Preservation

1. Introduction

Revitalization often stems from attracting and retaining a diverse community of creative individuals who contribute to the economic and cultural resurgence of cities [1]. Redevelopment encompasses a process that captures the essence of transforming areas. It involves examining the past projecting into the future and adapting to the needs of a place. This intricate endeavor requires tools, such, as having the authority to acquire estate exercising eminent domain, and developing and selling property without competitive bidding. Additionally, it involves relocating individuals and organizations with interests in the acquired property.

The goals of redevelopment are deeply rooted, in addressing the challenges faced by areas. Neglected neighborhoods often suffer from blight, crime, and economic disinvestment. The primary objectives of redevelopment aim to rejuvenate these communities by restoring vitality. This is achieved through targeted interventions that encourage growth attract investments and create job opportunities. Furthermore, redevelopment also addresses the needs of cohesion and community well-being. Marginalized communities often face the challenges of division, a standard of living, and limited access, to critical services. By implementing strategies urban revitalization aims to restore community bonds improve facilities and ensure fair distribution of resources promoting a sense of inclusiveness and civic pride, within the population [2].

Urban landscapes evolve, reflecting the ebb and flow of history, culture, and economic activity. In this dynamic process, certain areas may experience decline and neglect, resulting in a disconnection from their once-vibrant past. One such emblematic case is Machhabhaudi, a historic district nestled at the heart of Dharan, Nepal. Machhabhaudi, once a thriving epicenter of economic dynamism and cultural exchange, has borne witness to a gradual decline. This transformation is palpable in its now tranquil streets, underutilized spaces, and the fading vibrancy that once defined it.

1.1 Background

Dharan-Bijaypur served as the capital of the Morang Kingdom of Limbuwan from 1584 until 1774. Additionally, it served as the de facto capital of Pallo Kirant Pradesh, the collective name for the ten Limbu Kingdoms that made up the Limbuwan area. The baseland of the formation was Kirant Pradesh (zone), prior to King Prithivi Narayan Shah's conquest of Bijaypur, the capital city of the Morang Kingdom of Limbuwan. Prior to the 1950s, Dharan was known as Bijaypur. However, when the town expanded over the southern part of Bijaypur, it acquired its own name, Dharan.

Development in Vijaypur began in 1985 BS. Subsequently, Prime Ministers Chandra Samsher and Juddha Samsher founded Chandra Nagar (now Purano Bazaar) and Juddha Nagar (now Naya Bazaar). The term "Dharan," a rectangular

Figure 1: Process of Revitalization

pit excavated beneath the earth with a low platform atop it for sawing logs with a large saw—one person on the platform and another beneath it—was the inspiration behind the city's name. Additionally, it used to be common practice in "Dharan" to split wood following the founding of the city. When Ghopa and Vijaypur village panchayats combined to form the Dharan municipality in 2035 BS, the village took on its current form.

Throughout the year, many ethnic groups celebrate their unique cultures. Dhan Naach (dance) of Limbus, Lakhe Naach (dance) of Newars, Chyabrung Naach (dance) and Chasok Tangnam, and Gai Jatra, Sakela of Rai, Rodighar of Gurungs, Selo of Tamang, Baalan of Brahmins and Chhetris and Sanginis and San In Dharan, also have Sakela tournament every year. It begins on Baisakh Sukla Purnima (full moon on the first day of the month of Baisakh) and lasts for 15 days.

The temple of the Hindu god Hanuman named Panchmuki Balaji Dharan Dham is the most important temple of worship in Dharan. Because of its magnificence and authenticity, many stories are associated with the temple. People come from all over India, including West Bengal, Sikkim, Rajasthan, and Nepal, to seek the blessings of Lord Hanuman. Every six months, on the day of Purnima, a mela is held at this temple because Lord Hanuman was born on this day.

However, the revival of Machhabhaudi is not a mere wish; it is an imperative. The crux of this endeavor lies in its potential to resurrect the district's historical prominence while addressing the pressing challenges of today. Akin to other urban areas, Machhabhaudi's descent into a serene, disordered, and less energetic enclave mirrors broader urban trends. These trends encompass the absence of activity and enclosure on its streets, underdeveloped core areas, and a discordant balance between open and built spaces. As we embark on the path of revitalization, we aim to breathe life back into Machhabhaudi, recapturing its historical essence and ensuring its resilience in the face of contemporary urban challenges.

2. Research Question

The Machhabhaudi revitalization initiative is a comprehensive architectural intervention project aimed at rejuvenating a historically significant area. Its primary objective is to create a sustainable living environment that fosters economic activities while preserving its cultural heritage. This research paper centers on the examination of Machhabhaudi's decline and the efforts to revive its economic vitality and cultural importance.

- How can the urban redevelopment of Machhabhaudi effectively balance economic revitalization with the preservation and promotion of its cultural practices?

- What strategies and approaches can be recommended to ensure the sustainable economic and cultural regeneration of Machhabhaudi as a model for urban redevelopment?

3. Study Area

3.1 Geographic Formations

Arranged in eastern Nepal's Sunsari Area, Dharan ranges 192 km2 and is generally 600 km southeast of Kathmandu, the country's capital. 137,705 individuals were checked in Dharan, one of the three biggest cities in eastern Nepal, concurring to the foremost later census (CBS, 2012). Mudstones, shale, sandstone, and aggregates are cases of the exceptionally youthful sedimentary rocks that are found in Dharan, which is found at the foothills of the Siwalik run. At a height of 1148 feet (349 meters), its southernmost point touches the edge of the Terai region. It is found within the northern foothills of the Mahabharat Extend.

3.2 Demographic Progression

There are 177 homes within the neighborhood and 85 homes on the site. Ward No. 3 incorporates a 0.13 km2 range. There are 4838 individuals living in Ward No. 3. This yields a populace thickness of 0.0372 persons/m2, or 4838 / 130000. This demonstrates that there are generally 815 individuals living in the area.

3.3 Social Structure

Dharan has an 83.14 percent education rate with a female proficiency rate of 77.36 percent appearing women's strengthening and break even with interest in terms of improvement. This appears there are higher prospects of improvement that may be actualized with a more prominent level of support. The city is shaped by an intermix of castes and ethnic individuals i.e., More current, Rai, Limbu, Muslim, Brahmin, etc. The settlement design is created as per the caste framework. It is found within the heart of Dharan with a location zone of 0.131 Sq.km. The populace of this ward is 4838. The devout thickness of the ward is Hindu (62 percent), Kirant (23 percent), and the remaining (15 percent). The ethnic bunches of this region are Rai (19.40 percent), Limbu (11.30 percent), Newari (14.20 percent), Chhetri (10.10 percent), and Brahmin (14 percent). Dialect dissemination is Nepali (43.86 percent), Newari (10.10 percent), Tamang (5.63 percent), and others (26 percent).

3.4 Cultural Diversity

The city is celebrated for celebrations such as Udhauli celebrated by the Kirat community, Chasok Tangnam celebrated by the Limbu community, Lakhenach, Gaijatra and Yomari celebrated by the Newar community, Shelo celebrated by the Tamang community, Rodhighar celebrated by the Gurung community and Balannach and Sangini celebrated by the Bahun, Chhetri communities.

Dharan gloats a few places of adore with such a changed populace, counting sanctuaries, churches, and a mosque. Bijaypur Slope is critical since it has various crucial sanctuaries, including Dantakali sanctuary, Budha Subba Sanctuary, Pindeshwar Sanctuary, and Panch Kanya. As well as being devout, these sanctuaries are verifiably and archeologically critical. Customs, celebrations, and merriments are held at these sanctuaries.

Lack of interest in the people for their culture and tradition due to the influence of more powerful and predominant culture results in the decline of cultural practices. Lack of people's participation in the conduction of social and religious practices and transfer of information on cultural practices to the youths leads to the decline of cultural and ritual practices.

Figure 2: Cultural Diversity

3.5 Economic Outlook

A total area of 131 square units. Rewrite this text in simpler language: km. In Macchabhaudi, the main types of work people do are business (half of the people), taking care of animals (a quarter of the people), working regular jobs or receiving pensions (about 1 in 10 people), and doing manual labor (1 in 10 people). Most of the area surrounding the site has buildings that have a variety of uses. These buildings have shops on the first floor. Three important things help the economy: places to buy meat places to buy vegetables and small shops where people sell things.
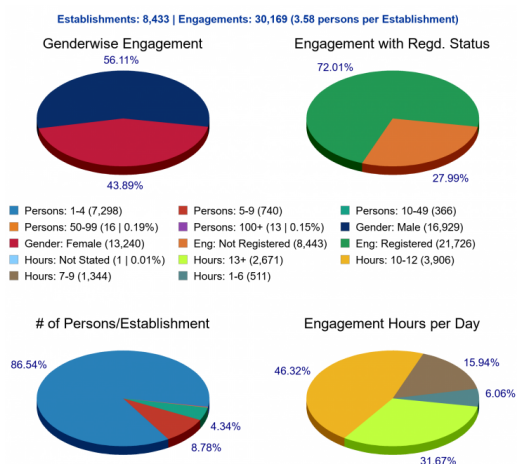

Figure 3: Economic Outlook

3.6 Climatic Shifts

In Dharan, the weather is generally mild and moderate. In the cold season, there is much less rain compared to the warmer season. This weather is known as Cwa according to the Köppen-Geiger climate classification. The average temperature in Dharan is 21. 6 degrees Celsius or 70. 8 degrees Fahrenheit, as per the data collected. In this area, the amount

of rain that falls each year is about 1796 millimeters or 70. 7 inches Dharan is located in the top half of the Earth. Summer begins in late June and finishes in September. In summer, we have four months: June, July, August, and September. The most preferable months to visit are March, April, May, June, August, September, and October.
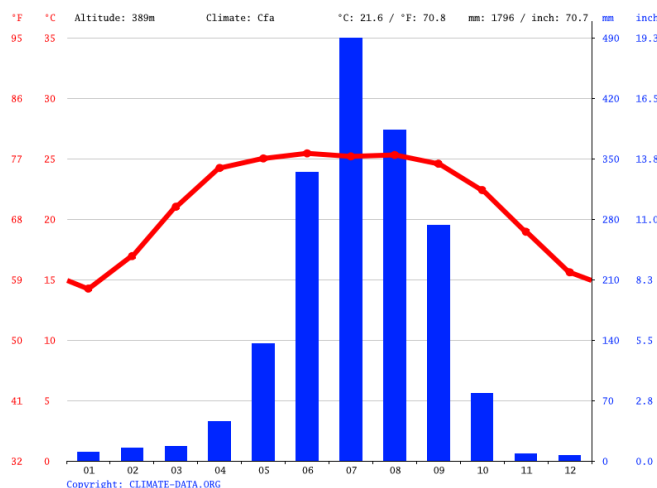

Figure 4: Climatic Shifts

3.7 Kevin Lynch: Five Elements of City

Paths The paths that the viewer usually, sporadically, or possibly travels. may consist of transit lines, walkways, streets, canals, and railroads. A street may gain prominence if there is a concentration of unique use or activity along it. (Example: Sadan Road vendors).

Edges Edges are the linear components that are typically but not always regarded as paths. The lines that separate two types of areas and serve as lateral fences are linear breaks in continuity. The edges also provide the skyline, and our site's skyline indicates that the north has greater growth and prosperity because of its higher skyline.

Figure 5: Edges

Districts Districts are medium-sized to large-scale, two-dimensional areas of the city that are easily identified by shared, distinctive features. The innumerable elements that

make up a district's physical attributes are as follows: topography, building type, use, activity, texture, spaces, form, detail, and symbol.

Landmarks One kind of point-reference that is external to the observer and does not require entry is a landmark. Generally speaking, landmarks are very clearly defined physical objects like signs, buildings, or mountains. A landmark can create local contrast with neighboring elements, make some elements visible and distinct from distant locations, or provide general form, shape, and height clarity.

Nodes An onlooker can access nodes, which are points or key locations within a city. She/he travels to and from what is regarded as an intense focus. Additionally, they serve as public spaces, hubs for activity, and breathing voids [3].

Figure 6: Nodes

3.8 Urban Fabrics and Forms

The physical structure of cities and towns is called the urban fabric. We can see differences in the urban fabric at our site when we compare it to that of the other location. For example, the inner core has coarse grain because of haphazard path formation and unplanned settlement. Even so, the streets on the outside are lined with tiny grains.

Fine Grains The urban fabric of fine grains is made up of several nearby small blocks. There are a lot of opportunities for exploration and discovery with this. Surface parking is available on unoccupied lots. The traffic is safer and moves more slowly as there are more intersections. This results in an urban fabric that smoothly transitions from sparsely populated residential areas to retail centers with a mix of uses.

Coarse Grains These areas retreat inside, defending themselves against the imagined threats of the outside periphery, rather than attempting to dominate the street. This demonstrates the school's increased desirability.

Figure 7: Fine Grain Impact

Figure 8: Coarse Grain Impact

4. Literature Review

4.1 Urban Regeneration

The short answer is that by "urban regeneration" we mean initiatives whose aim is to promote social inclusiveness and energy efficiency in cities. These initiatives are translated into projects and investments designed to bring back underutilized assets and redistribute opportunities, increasing urban prosperity and quality of life [4].

Urban areas are complex and dynamic systems. They reflect the many processes that drive physical, social, environmental, and economic transition and they are prime generators of many such changes. No town or city is immune from either the external forces that dictate the need to adapt, or the internal pressures that are present within urban areas and which can precipitate growth or decline. Urban regeneration is an outcome of the interplay between these many sources of influence and, more importantly, it is also a response to the opportunities and challenges which are presented by urban degeneration in a particular place at a specific moment in time [5].

4.2 Economic Regeneration

Economic regeneration is a vital part of the process of urban regeneration. It is needed to counter the economic decline experienced by cities with the changes in the workings of the economy and the increasing globalization of markets [5]. Economic regeneration is the process of assisting a community's business expansion through programs that support employment, skill development, startups, and wage growth, among other objectives. Economic regeneration aids in luring private investment, promoting corporate relocation, and spurring residential development by enhancing the local economy in a city's impoverished areas.

4.2.1 Components of Economic Regeneration

The successful economic regeneration of a city is two-sided, both demand and supply processes are at work.

Demand Side The demand side will be determined by the city's ability to retain local expenditure and to attract more spending from outside. This may take the form of demand for industrial production or the output of the service sector. Efforts to promote the city aim to attract new sources of expenditure.

Supply Side Infrastructure improvement, including the construction of new roads or the renovation of existing ones and other communication links, requires investment on the supply side. Redeveloped land must be made available for the growth of new industries as well as for those already in operation and eager to relocate or expand.

4.3 Cultural Regeneration

Locations prioritize the development of families, the arts and culture, health and wellness, and education and skill-building. In this instance, the goal is to provide chances for people living in affected areas to fully participate in community life and larger society in a more significant and group way. Successful social and cultural revitalization initiatives include establishing museums and cultural hubs in impoverished areas, which subsequently spur economic growth.

1. Collaboration with community members, cultural organizations, and government agencies to develop effective cultural revitalization initiatives.

2. Documentation and study of cultural practices, including language, art, and other forms of cultural expression, to promote understanding and preservation.

3. Education and awareness campaigns to promote cultural practices and values among community members and the broader public.

4. Preservation of cultural heritage sites and artifacts to protect and promote the history and traditions of a community.

5. Integration of traditional practices into modern life to ensure that cultural practices and values remain relevant and continue to be passed on to future generations.

5. Methodology

Comprehending the project involves traversing a series of processes and layers. The comprehensive project execution procedures are depicted in the flow diagram. To unearth the historical context, current conditions, and site-related challenges, we conducted key informant interviews and focus group discussions. This investigation is grounded in primary data gathered from the residents via a meticulously designed questionnaire.
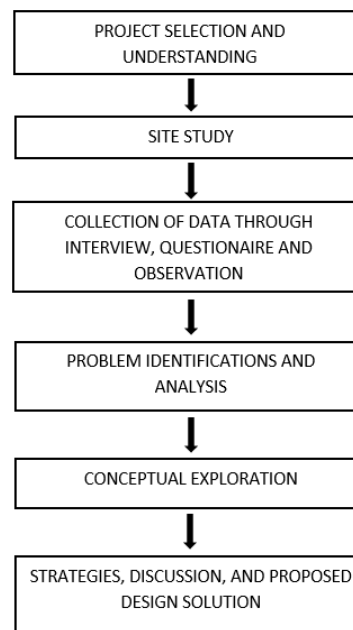

Figure 9: Methodology

Site Selection Site selection involves a structured process of identifying suitable areas for revitalization within a city. It begins by establishing criteria such as infrastructure, accessibility, land use, and community needs. Data analysis, including geographic information systems (GIS) and demographic data, informs the assessment of potential sites against these criteria. The chosen site aligns with the redevelopment goals and often requires urban planning, zoning adjustments, and community engagement to achieve economic and cultural regeneration while enhancing the urban environment.

Site Study Site study for urban redevelopment involves a detailed analysis of a specific location within a city. This includes gathering data on land use, infrastructure, environmental factors, and community demographics. The findings inform urban planning decisions and strategies for optimizing the site's potential for economic and cultural regeneration.

Data Collection Data for urban redevelopment is collected through interviews, questionnaires, and observation. Interviews involve structured conversations with community people, gaining qualitative insights. Questionnaires gather structured data from a wider sample. Observation provides real-time, objective data by directly witnessing site conditions,

behaviors, and activities. These methods offer a comprehensive understanding of community needs, preferences, and existing urban conditions, guiding redevelopment strategies and decisions.

Problem Identification Problem identification and analysis entails systematically assessing existing issues through data collection, local people's perspectives, and site evaluation. This process pinpoints challenges like infrastructure deficiencies, blight, community needs, or cultural preservation concerns, providing essential insights for designing effective revitalization strategies tailored to address specific urban problems.

Conceptual Exploration Conceptual exploration involves brainstorming and creative thinking to envision potential solutions and develop ideas. This process often includes design charrettes, workshops, and collaboration with urban planners and architects to generate innovative concepts and urban development scenarios that align with the project's objectives and community aspirations.

Strategies, Discussion, and Proposed Design Solution Developing strategies, discussing options, and proposing design solutions for urban redevelopment involves collaborative planning, where stakeholders engage in dialogues and workshops to outline goals and preferences. This process combines data analysis and community input to refine urban design proposals that address specific redevelopment needs while considering economic and cultural regeneration. The proposed design solutions encompass physical, social, and economic aspects, aiming for holistic urban revitalization.

6. Findings and Analysis

6.1 Planning and Concept

Regaining the charm of the place that was lost during the urbanization transition is the idea behind this redevelopment. Creating a diverse neighborhood on the property through areas designated for social interaction, cultural activities, and commercial establishments. Based on the needs of the current scenario, urban form and strategy development are created.

Market Regeneration: Renewal of prior financial hubs through market regeneration, although on an interim level.

Cultural Revival: Bringing back the beautiful lost charm of cultural activities by continuing the practices of the Jatras and preserving the nearby cultural heritages.

Connection to Nature: Developing open spaces for social interaction and recreational spaces for the neighborhood.

6.2 Design Strategies

- Constructing commercial buildings and activities on the southern side to supplement the existing revenue stream of the site.

- Developing small-scale commercial vendors on the eastern side for traditional economic activities by pedestrianizing

the West road.

- Redefining the Jatras' route, with the neighborhood square serving as the starting point and the Ram Mandir as the final node for the performances.

- Setting up a community hall to preserve cultural practices and equipment and pass them on to the following generation.

- Creating auxiliary connections on the site to improve the site's permeability.

- Designing community parks as a place where people can congregate, socialize, and enjoy recreation, acting as the hub of the neighborhood.

7. Conclusion

The revitalization of Machhabhaudi represents a profound transformation, extending beyond physical reconfiguration. This research has illuminated the intricate web of challenges and opportunities inherent in urban revitalization. Guided by the community's dreams and aspirations, our vision transcends mere urban renewal to embrace holistic transformation.

The design strategies signify a commitment to vibrant, inclusive, and sustainable communities. Emphasizing the power of diversity, diverse neighborhoods, redefined paths, community spaces, and improved site connections foster community interaction and cohesion.

Machhabhaudi's decline echoes broader urban trends—neglected neighborhoods, quiet streets, and an imbalance between open and built spaces. However, its revival is a necessity, not a wish. Redevelopment encompasses more than construction; it signifies hope, opportunity, and vibrancy restoration. This collective endeavor aims to preserve historical prominence and ensure a future marked by vibrancy, opportunity, and enduring community bonds, resonating with urban areas worldwide seeking renewal.

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