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What Came First - The Street or The House?

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Abstract: ***This research paper examines the dynamic relationship between streets and housing in Karnataka, India, across different historical periods, encompassing cultural, historical, political, and industrial influences. It illustrates that the sequence of streets or housing development is context-dependent and community activity based. The paper concludes by noting the changing dynamics of streets and houses in contemporary urban design, emphasizing the importance of infrastructure, drainage patterns, and public spaces in shaping the urban landscape.***

I. INTRODUCTION

For a considerable duration, architects and urban planners have sought patterns within figure-ground drawings. Such drawings, which juxtapose solid masses against open spaces, can convey a wealth of information. In this paper, we explore the origins of these figure-ground drawings, the connection between solids and voids, and whether the white areas gave rise to the black ones or vice versa. The fundamental framework of an urban context, namely the street grid patterns, can be analyzed. Furthermore, it explains the dimensions and consistency of open spaces. Over time, patterns of settlement growth have been influenced by factors such as development size, location, density, land use, connectivity, and accessibility. The regions surrounding the solid figures are referred to as negative spaces, encompassing examples such as the air within rooms, spaces between neighboring buildings, open streets within cities, and parks (Hamer, 2016). We examined three distinct settlements in Karnataka's history across multiple timelines to uncover the layers concealed within the figure-ground drawings' edge conditions. Do the settlement systems manifest sustainable objectives? Are houses designed to accommodate a thriving population of joggers, cyclists, public transit users, and open spaces? Or are these trends merely contributing to escalating infrastructure costs and unsustainable lifestyles? (Seto, 2013). Is everything aligning towards the creation of a socially, economically, and politically active environment that fosters active living among its residents? Mixed findings have led to an appreciation of context-specific patterns.

II. METHODS

I interviewed locals from Malleshwaram, Turuvannur, and Kigga, including my parents and grandparents who have lived in Malleshwaram, Bangalore for over 50 years and have insights into the expansion of the current Bangalore city post-independence. Since Kigga is my native place, I found it convenient to study this village and document the entire village as part of my housing semester. Therefore, I had valuable references and a clear concept in mind when I interviewed the villagers and my grandfather. Turuvannur was meticulously documented by my batch as part of the housing semester. During this period, we spoke with every resident, gathering information about the development of the settlement, which provided me with enough data to select it as an example for this research. My Bharatnatyam guru, Dr. Padmini Shreedhar, offered cultural insights about Malleshwaram. I interviewed all of them separately at their places of work and compiled previously collected information for the purpose of this paper.

They were asked to describe how the village or town was when they could first remember it, whether they had heard any stories about the place from their grandparents, and specific questions related to road networks, the temple's relationship with the village, housing, etc. Additionally, a sample set of people from Malleshwaram, Kigga, and Turuvannur were asked the question: "What came first, the street or the house?" Their answers are summarized below.

III. RESULTS

As I walked up the staircase and almost completed the short trek to see the Yana caves in Karnataka, in its majestic glory, my father mentioned how when they were children, they had to create their own path to reach the caves. They had to cut through the grass and weeds. He held a knife, cutting of the bushes in his way as he climbed up the hill. He mentioned how the path had to be created first for the people to navigate and set up small shops and eventually a settlement would grow. The fruit seller at the foot of the caves mentioned that they had to create pathways as it became a place of attraction, and slowly they moved in to start their business.

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One question that has bothered me since and led me to research on whether a road network was laid first, and then there were plots allocated, or the houses were built first and then the negative space created streets, realizing that there are many layers to these questions and cannot be generalized to either. Cultural, historical, political, industrial advancement were some of the reasons I found to this question after interviewing with many locals and residents.

Turuvannur, a village located 210 km from Bangalore, was extensively studied during housing research. Our findings revealed that houses were strategically placed to navigate the rocky hilly terrain of the area, and the roads essentially constituted the leftover spaces surrounding the houses. In a figure-ground drawing of the village, the dense housing areas are depicted as black, while the white spaces represent the streets. These houses were constructed within a fortress enclosure wall, although these walls now lay in ruins, with only fragments remaining visible. These curved batten walls have created pockets of public spaces, highlighting the village's emphasis on communal gathering spaces and house planning over street planning. The streets are sufficiently wide to accommodate an oxen cart. The village's meticulously designed drainage and road pattern have made it a subject of extensive study by housing researchers aiming to optimize space utilization.

Further South of Karnataka, in Kigga, a village situated eighty kilometers from Udupi, a remarkable arrangement of houses along a linear road leading to a temple was observed. This unique layout originates from the temple's entrance archway, and the road serves as the path for pulling the temple's chariot. Due to the tradition of every house offering gifts to the deity and the chariot's design limiting its turning capacity, the entire village strategically developed along a straight road that could easily accommodate the chariot. The village essentially revolves around this central road, with secondary roads connecting to agricultural lands behind the houses. Situated in a valley, this road has since been transformed into a state highway, serving as the primary navigational route connecting neighboring cities.

When transitioning to a large city like Bangalore, one can observe the interplay of traditions and industrialization that have given rise to distinct settlement and street patterns. To facilitate comprehension, this transformation can be divided into three chronological segments: pre-Bubonic Plague of 1898, pre-colonization, and post-colonization eras. Malleshwaram, one of Bangalore's historic areas, stands as a prime example of a town that has undergone significant changes throughout this timeline. Originally, Malleshwaram was the area housing the Kadu Malleshwaram Temple, constructed in the 17th century, and first functioned as an Agrahara. Following the Bangalore Plague, this region evolved into a gridiron-style housing settlement, and post-colonization, it transformed into the Cantonment area of Bangalore (Dasharathi, 2012). Analyzing the origins and causes of these diverse settlements provides profound insights into the research topic.

When examining historical maps of Bangalore, we discover the prevalence of agraharams, which were popular settlements dating back 1500 years. These agraharams were small parcels of land gifted by kings to Brahmins for the purpose of maintaining temples and sustaining families, thereby generating revenue for the land. (Rekha, 2014). The road patterns within these settlements were dictated by religious symbolism, where circumambulating the temple thrice before completing a pooja was customary. Consequently, the roads encircled the temple, and priest families resided along these circular routes. These roads sometimes formed concentric circles or linear layouts, depending on land topography and resource availability. The houses typically included front yard space for cattle shelter.

Over time, agraharams evolved into compounded regions where streets were integrated within the houses, known as "Vatara Mane." Within a single structure, row houses shared common walls on either side, with a communal pedestrian street in the front. This architectural typology gained popularity in Bangalore due to population growth and diminishing land availability, marking an early form of apartment complexes. The concept of renting emerged, leading to the construction of private roads connecting rental properties. This housing style also gained traction as joint families transitioned into dispersed nuclear families. This development led to the creation of primary (mains), secondary (crosses), and tertiary private streets. The layout was designed such that crosses intersected mains at perfect right angles, with tertiary lanes running parallel to the mains. Land parcels extended from the mains all the way back to the tertiary lanes (Vaidya, 2014). The compact nature of these narrow houses encouraged residents to utilize private roads extensively, gradually giving rise to courtyards.

Malleswaram, originally a forest area surrounding a temple, was transformed into a suburb in response to the 1898 plague outbreak in Bangalore, which necessitated a deliberate effort to decongest the city. It was designed as a healthy and secure town, with road layouts based on the nearby river, serving as a water source and a refuge for the population after the plague. The roads were planned to divide the area into eight blocks, each catering to a different sector of the population. (Dhanpal, 2021. Drainage systems were designed to align with the topography's natural patterns and slopes, while houses were constructed using superior building materials and ventilation. Groundwater studies were conducted to minimize any hindrance to the water flow direction (Stephens, 1922).

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During the reconstruction phase, all plots were allocated to culturally prominent individuals from Bangalore, with the aim of promoting the city's arts and crafts. The roads were intentionally narrow, allowing just enough space for oxen carts to move, while the front yards were spacious to facilitate dance and music classes. The narrow roads also proved advantageous during festive processions, creating a lively and intimate atmosphere.

In the post-colonial era, with the booming transportation industry, rickshaws replaced hand-drawn or horse and ox carts in the 1950s. Cars were introduced in the early 1900s, and buses followed in 1940 (TOI, 2016). To accommodate these modes of transportation, roads were widened, and footpaths were reduced to a minimum. Plots became smaller, resulting in a reduction of front yards and verandah spaces. Main roads were strategically planned, leading to the expansion of communities around these thoroughfares, engulfing the older, smaller parts of Malleshwaram. Today, it stands as one of the most well-planned gridiron settlements, characterized by effective drainage systems and tree-lined, wide roads (Iyer, 2019).

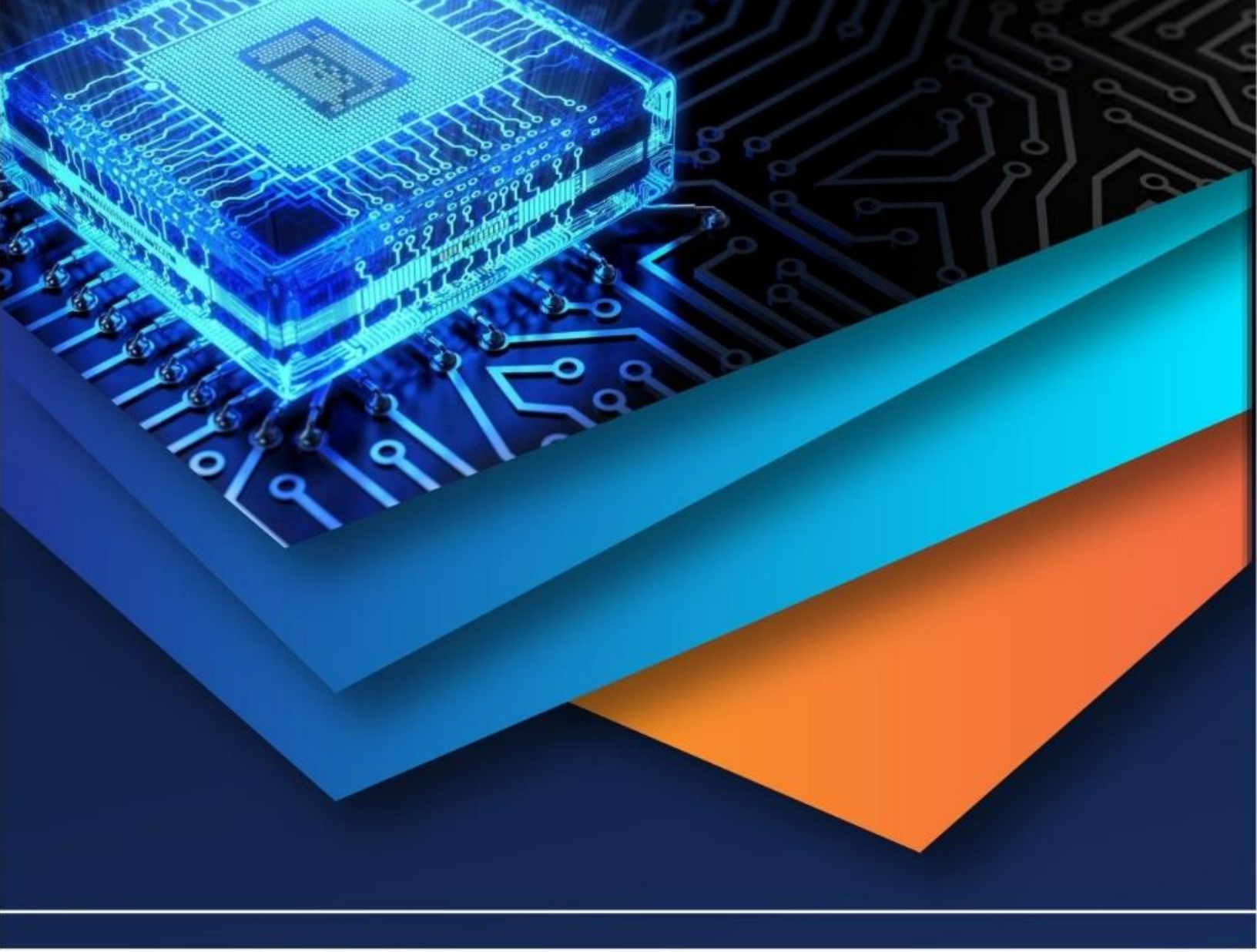
IV. DISCUSSION

On an urban scale, the relationship of the street and housing can be understood in a figure ground drawing. When the houses or the built-up area is shown in a solid color, the space unoccupied becomes the streets, including the public squares. Patterns can be found in these drawings. It can be studied to infer the relationship of the claimed land vs the unclaimed streets. A gradually developed city scape has many stories of streets and house arrangements. The answer to the question ‘what comes first, the street or the house?’ depends on the timeline when the question is asked. In the early times, a main force would determine the arrangement of housing, example, around a water body, or a shrine, or a leader’s house. The streets came to being by just clearing out paths for daily activities, like fetching water or fruits from the forest area. Navigation was made easy by creating paths that later became streets. Defined streets came into being after processions started to take place, and we required space for chariots, and for them to turn. At this time, the main roads were created for processions and there were secondary and tertiary roads where dwellings were arranged. Later, due to industrialization and population growth, the roads had to be laid first in order to define transport routes and sizes of dwellings based on class and race. The roads were widened based on traffic, and connectivity between cities and states. Now we see plots being sold based on proximity from main road, highways, and residential roads. Population growth is the reason for growth of roads and housing around it, whereas in some emerging cities, we still see the spin of solid spaces being the dwellings, and the negative space acting as streets. In cities, with the growing need of a good urban design, drainage pattern and social infrastructure, we see this negative space being redefined to produce public spaces for the people, leading to a change in dynamics of the previous known streets and houses.

REFERENCES

[1] (Dasharathi, 2012) Poornima Dasharathi, Unhurried.
[2] (Dhanpal, 2021). Sonali Dhanpal, “The ‘Unintended’ City’: A Case for Re-reading the Spatialization of a Princely City through the 1898 Plague Epidemic.”
[3] (Hamer, 2016) Sophie Hamer, The Figure Ground.
[4] (Iyer, 2019) Meera Iyer, Discovering Bengaluru.
[5] (Nair, 2005) Janaki Nair, The promise of the metropolis: Bangalore’s twentieth century.
[6] (Rekha, 2014) Dr. Rekha H G, Agraharas of Ancient Karnataka.
[7] (Seto, 2013) Human Settlements, Infrastructure and Spatial Planning.
[8] (Stephens, 1922) Fraser town – A plague-proof town in India.
[9] (Vaidya, 2014) Vaidya R, The vataaras in South Bengaluru’s petes and gudis: a retro-journey.

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