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Habitat Design: New Directives

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Abstract

For a city in transition not only is there a need for planners to provide accountability of development and growth continuum but also ensure a pattern for objective spatial description network. Orientation towards ideal cognition and provision of a framework for accountability is vital. Interpretation of the structure of mould forming the physical environment made up of people and space with time playing an integral contextually relevant catalyst is essential to evolve experiential knowledge about the urban stature. The planned or self evolved urban grammar owing a perceptual sense of order with accountability for continuum could often be treated as the base order with perpetual indicators defining the edges of physical realm associated with a developing conurbation.

The study provides insight into new urbanisation trends prevailing in India and approaches propagated by individuals, organisations and statutory bodies for realizing a better built habitat. A theoretical ideation: Critical Proposition Theory, a decisive framework to ensure progress in the right direction has been derived, supported by graphical - visual illustrations with cognitive reasoning. It is apparently evident, how these cities are envisioned with time would determine the practicability of subsistence for future generations.

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Keywords: urbanisation; imageability index; urban renewal strategies; urban built morphology; critical proposition theory

1. Introduction

India is a country in South Asia. It is the seventh – largest country by geographical area, the second – most populous country. India has the latitude of 22° 00'N and longitude of 77° 00'W which denotes its graphical alignment. The specific latitude of India suggests its position in Northern Hemisphere. “The terra firma of India is bound by the Bay of Bengal, Arabian Sea, Pakistan, Bangladesh, Myanmar, Nepal, Bhutan and China” [1].

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Traditional dimension of space in an Indian City could be analyzed based on indicators like ethnicity, caste, religion and language. However these approaches were gradually superimposed by governance, politics, economics, commerce and demographics, when new cities either emerged or got conceived. Many new cities were envisioned by Indian nationalist leaders post independence. The basis of most of the planned approaches had strong linkages to western theories and principles. The level of successful implementation of various plans however remains unconvincing. Whatever the approach might have been space in an urban context definitely has its own disposition.

The architecture of an urban environment tells history and frames images. This perceptive generated can be seen as stage set for various episodes and happenings to come about with transition of time. Regions in a town differ according to their evolutionary rationale and functions. It envisage a morphological image of architecture which is relatively permanent, however transition or change is imperative with time. Gradual commoditization of development and changing patterns of social life has brought about a paradigm shift.

The rapid demographic growth in and around Indian cities is changing the physical dimensions – the size, shape, density, land uses, spatial structure and building types – of its cities. Increased urban development puts intense pressure on existing urban infrastructure to support quality of life. Urban growth often manifests itself as overcrowded and very high-density urban forms, claimed to contribute to crime, physical and mental illness and poor living conditions. The current physical form that intense urban growth takes is therefore generally considered to be unsustainable [2].

The notions of space in Indian cities (present context) in general perspective are increasingly based on global comparative imageability basis. However the legibility of arrangement of utilitarian needs amidst rising numbers of prosperous habitants, successful middle income group and poverty struck economically backward group is quite flawed and disorganised. In most cases intervention to provide coherence to new cities as well as existing cities which are facing tremendous amount of increase in population and urban sprawl is linked to infra structure planning, public health, housing and governance. Less significance has been given to understand the transition over time of a city and associated issues of unplanned organic developments, notably the slums which have become symbolic image associated with any developing city under review. Space and its representation are central to understanding architecture and urbanism.

On the face of it, the city is two things: a large collection of buildings linked by space, and a complex system of human activity linked by interaction. We can call them the physical city and the social city. Urban practice and theory must connect one to the other [3].

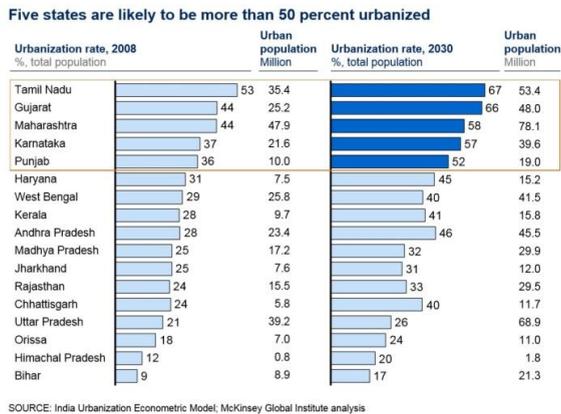


Fig. 1. Urbanisation Index

Source: The McKinsey Global Institute . India's Urban Awakening: Building Inclusive Cities, Sustaining Economic Growth. 2010.

2. Urban Morphology

2.1. Human Settlements

“Human settlements contain people and societies in a physical environment consisting of natural and man-made elements” [4]. In relatively simple terms we can relate settlements to any form of human habitation with certain structure based on native organic pattern or a planned development, gratifying to needs of a certain density of population. In developing countries there is definitely an evident rift between urban and rural settlement patterns. In order to have cognition about the aspect of settlement pattern and resultant built environment, it's quite significant to be aware of the attributes that bring about concise symbolism or highlights the attributes associated with the pattern formation. The urban pattern is a result of the relationships between people and their social, economic and physical environments. “For all that, the city is one of the most remarkable, one of the most enduring of human artifacts and human institutions” [5].

Reviews of succession of settlements indicate that topographical influences were a major factor in determining the affluence and growth continuum of a society. Many of these settlements were located along potent rivers and lakes, in deltas or along coastlines, cultivated eco systems and mountainous terrains. Whatever the context of the topographical setting and other influencing indicators might be, the inhabitants soon influenced their urban environment to mould the micro as well as macro settings and modify it according to their needs. “The socio – spatial dialectic, as it has been termed, is a continuous two – way process in which people create and modify urban spaces while at the same time being conditioned in various ways by these changes ” [6].

Thus urban form is not only the architectural form of the city; it is also a cultural manifestation. These statements provoke thought and point the direction of progress to the critical significance and vitality of the role of society and culture in the progression of a settlement pattern and resultant built environment. “Great architecture and ambitious architectural theory relates architectural progress with social progress” [7].

2.2. Imageability Index

A rational basis is always required to correlate - explain the manner of configuration of overall linkages of various dimensions that make up a city. Considering this notion of approach aspects like order and structure provides scope for elevating our understanding of the aspects that provide a conceptual as well as physical realm of experiential quality to the cities we live in. Order might be identified with recognizable similarity of parts in a similar relation to each other while structure are formed by deep rooted linkages superficial as well as internalized, anchoring various sociological attributes. The resultant notion of spatial disposition would reinforce the relevance of organizing principles in urban design. Spatial disposition which influences the composition of various elements in an urban context encompasses the whole. This approach predominantly constitutes the organization of a settlement. spatial disposition or spatial character is an ideation used to interpret, design and realize human settlements. The settlements exist as adaptations of natural topography and dependence on resources drawn from much wider area.

“The art of planning and design is to arrange the elements of the structure into a system of reference that supports the process of living, and which establishes a spatial logic eliciting responses from the many actors who contribute to settlement –making” [8]. Aspects of Time and Place provide the divergence in the general imagery of a space. This is brought about by the organization of various elements of the structure and the relation applicable among these elements in a given context and scope for continuity; this governs the spatial expression of a built environment. Converging towards settlements; multifaceted and active entities made up by diversified representation of various communities.

The imageability index explains the process involved in cognition which would create the general imagery of habitat realm in a person. General imagery of a city could be rightly observed as the blending of the collective identity of its diverse occupants exemplified by built realm. This would contribute towards meeting the utilitarian needs of the people and for evolution of a sense of identification or more precisely a provincial identity. Positive image formation of habitat realm as part of cognition is constituted by the following acts; perception, convergence and recognition based on information received from external environment and its interpretation. This phenomenon over a time results in convergence or towards formation of a symbolic distinctiveness marked by regional traits leading to formation of general imagery of a place.



Fig. 2. Ideation - Imageability Index

Source: Author

3. Urban Renewal Strategies

3.1. Urban Renewal Planning Approaches

A quick review of cities in developed nations enlightens us on progression towards shifts in settlement planning approaches. Initially the urban sprawl gave way to development of industrial cities associated with mass migration and concept of people residing close to workplace approach. This was followed by the upsurges in development of sprawling suburbs - satellite cities linked to the core city by express highways, bridges, tube rail systems etc. this brought about deconcentration of major cities. Leading to acceptance of the idea of spatial separation of home from workplace and the rise of commuting culture. Over a period of time, popularity for this approach started to recede and movements towards compact city form and investments in the redevelopment and revival of city centres got preference. At each of these phases of evolution and transition of these cities we find relevance of proper planning playing a significant role in ensuring positive spatial planning and designed spatial habitats. Many of the important and most significant changes around the world are associated with urbanization.

Over the last three decades, urbanisation has shown unprecedented rates of growth, devastating the physical form of our cities which have been unable to deal with the swelling numbers. While this compression of people in a limited space symbolises optimism and is characterised by many positive attributes, it has spelt doom for the urban form of our cities [9].

Urbanisation could be considered as an irreversible act of land use transformation. For a city in transition, not only is there a need for planners to provide accountability of development – growth continuum but also ensure a pattern for objective spatial description network. Orientation towards ideal cognition and provision of a framework for accountability is vital. Indeed, whether the factors are controllable and predictable or uncontrollable and unpredictable, the understanding of the attributes/variables would lead to an ideal environment. Clearly how these cities are envisioned with time would determine the viability of subsistence for future generations.

Understanding the relevance of such approaches, the government might consider spatial development plans before clearing projects under the second phase of Jawaharlal Nehru National Urban Renewal Mission (JNNURM) from 2014. Spatial development plans are more comprehensive as they take into consideration not just the city, but the adjoining region and its impact on the region. The new requirement will mark a departure from the first phase of JNNURM, under which planners drafted city development plans focused on zoning to receive support for urban infrastructure projects. Indian cities were divided into zones according to their land-use, such as residential zones, commercial zones, public zones, institutional zones, religious zones, industrial zones, mixed land-use zones, natural areas and open spaces, and so on.

Spatial development has six layers: economy; mobility and networked infrastructure; affordable housing; social infrastructure; heritage; environment protection and disaster zones. A Bengaluru-based not-for-profit organisation working on urban planning, Jana Urban Space Foundation has submitted national urban spatial planning design (NUSPD) guidelines to the government— based on which spatial plans will be developed by cities [10].

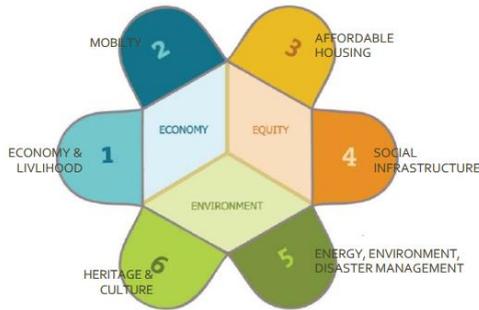


Fig. 3. Framework

Source: Ramanathan, Swati. *Portfolio*, Jana Urban Space Foundation, Jana USP, Web, 18 Nov. 2013

Similar ideations with stress to a thought process to envisage how a successful city could be evolved by combining various attributes was also highlighted in activities of Mirabilis Advisory and Indian Habitat Centre under a partnership known as Urban Habitats Forum. The Mirabilis Matrix is an analytical framework for urban thinking. It encompasses three verticals: Hardware, Software and Governance. The horizontals are: Liveability, Competitiveness and Environmental Footprint. It provides a way to think about how different elements come together to form a successful city.

	HARDWARE	SOFTWARE	GOVERNANCE
LIVEABILITY	Good quality housing and amenities like parks, hospitals, clubs and schools	Social networks & interaction. Clustering of amenities to create "urban buzz", a sense of place and history.	Safety and enforcement of Law. Simple and well enforced system of municipal regulation.
COMPETITIVENESS	Transport & communications links. Quality of office/ commercial space.	Clustering of human capital and ability to attract talent, socio-cultural openness.	Reasonable tax rates. Efficient governance structures.
ENVIRONMENTAL FOOTPRINT	Public transport, density, green spaces, waste management, etc.	Environmental consciousness, low impact lifestyles.	Air and water quality. Sustainable practices with regard to water supply & usage, etc.

Fig. 4. Mirabilis Matrix

Source: Urban Habitat Forum. *Mirabilis Matrix, habitat summit*, Mirabilis Advisory Pvt. Ltd, Web, 19 Nov. 2013

Relevance of a proper framework to ensure effective revival of existing cities and development of new cities in India is further being explored to be initiated with much more vigour by the present government. The Jawaharlal Nehru Urban Renewal Mission is being replaced by Atal Mission for Rejuvenation and Urban Transformation (Amrut) is beginning of such an initiative.

4. New Directives

4.1. Habitat Design

Multiplicity which forms the basis of our national fabric should form the basis of any conceptual design developments propositions. Unity in diversity leading to an integral whole should serve as the benchmark for prosperity and well being when nation building is being conceived off. The established ethos of cognition and enlightenment has always been linked to understanding the rationale behind the act of knowing the contextual setting by giving due importance to habitat factor variables. At this point we should reiterate the relevance of proper application of innovative technical knowhow, advancements in science and technology that we as a nation have mastered, while envisioning new built environments.

Portrayal of the urban habitat realm and decoding the factors that shape the strategies accountable for revival, transition and continuity requires proper deciphering. In this context, progress should not be a mere replication of developed countries approaches in terms of infra structure - imageability but contextually relevant, sustainable, and logical solution. In the present scenario of globalization there is a decisive need to recognize and understand the urban realm in terms of user groups, functions, built environment, infra structure management, science & technology and behavioural aspects. Evolution of a proposition that affirmatively integrates the various domains of thought and action, formulation of attributes which would serve as a point of reference for comparison and guidance is crucially required.

Interpretation of the structure of mould forming the physical environment made up of people and space with time playing an integral contextually relevant catalyst is essential to evolve experiential knowledge about the – urban stature. The planned or self evolved urban grammar owing a perceptual sense of order with accountability for continuum could often be treated as the base order with perpetual indicators defining the edges of physical realm associated with a developing conurbation. This proposition of interdependence of various aspects and understanding of relevance of chronological evolution, resulting in a particular kind of spatial order which elucidates the underlying aspects in a city based on certain settlement theories is significant aspect. This provides retrospection about factors which contribute to settlement –making and determine the relevance of structure in the overall physical design of a given space incorporating conservation, continuity and urban growth.

Solid – void symbolism should pave way for various physical as well as visual linkages which would define the pattern/grid of habitat realm. A spatial transitional interface constituted by physical, social, cultural, economical, institutional, infra structure and organizational elements of space making structure which sustain human communities. This is capable of expressing and externalising a sense of place and identity for the user. In simple words we can state that perception of habitat realm is initiated by perception, it further then leads to meaning formation based on cognitive process.

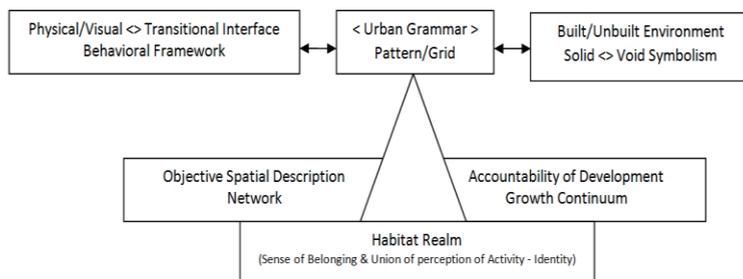


Fig. 5. Ideation - Urban Pattern

Source: Author

Urban realm is a constantly transitional space completely interlinked with its user, the total embodiment of function, perception, and sense of belonging. The activity generators associated to it are in a continuous state of interweaving dialogue. The resultant Populace – Habitat Language paves way for the built order often identifiable and highlighted by elements of urban design. The tangible process – product interface is a representation of various domains that constitute the sociological order of a community. With time - changing perception and divergent scenarios, the conception of Form, Space & Order – habitat design is to assimilate the knowledge, beliefs, purpose and values of a contemporary society while giving due importance to the precedents of progression.

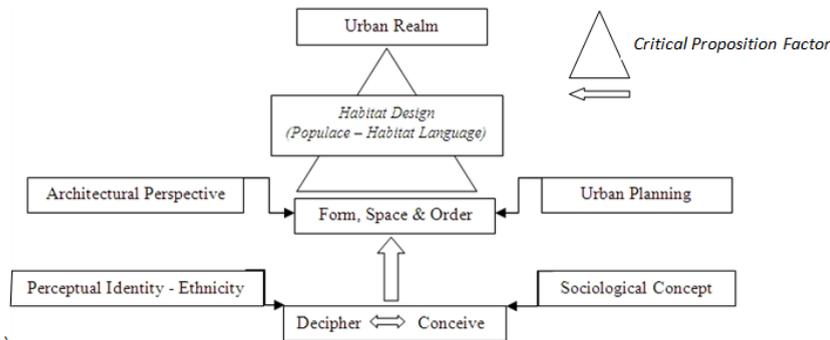


Fig. 6. Ideation - Urban Built Morphology Framework

Source: Author

4.2. The Critical Proposition Theory

The critical proposition theory is drawn from different factors influencing the physical design, social and cultural aspect of the city. In short it is a synthesis of the spatial relationships of various elements and reflections of the paradigm shifts associated with the transition – progress of a community. A board level understanding of the effective parameters that constitute the theory would induce better understanding of the built environment and resultant imageability as a whole. This perspective would definitely elevate the understanding of affective aspects of the users as well as the direction of transition of built environments and their built morphology.

A model for depiction, decoding, scrutiny and interpretation of the urban realm, urban structure & influencing parameters and the paradigm shifts associated/influencing new thoughts and approaches forms the basis of this theory building. The habitat design is perceived based on cohesive union of two factors that catalyse development: the horizontal and the vertical factors. The horizontal factors are made up by the society and the realm in which it subsist namely; the people and the environment. Meanwhile the vertical is constituted by scientific knowledge pyramid of progressive disciplines such as environment systems and planning, infra-structure and transportation management, architectural perspective and urban design, building structure and construction systems, and sustainable urban development. A thorough pursuit based on an integrative union of the horizontal and vertical factor based on action research would help envision cities and plan development frameworks for the future, along with proper consolidation of existing developments. Such approaches would lead to evolving innovative proposals for the re-use, re-development and regeneration of the built environment as well for successful realisation of new development proposals.

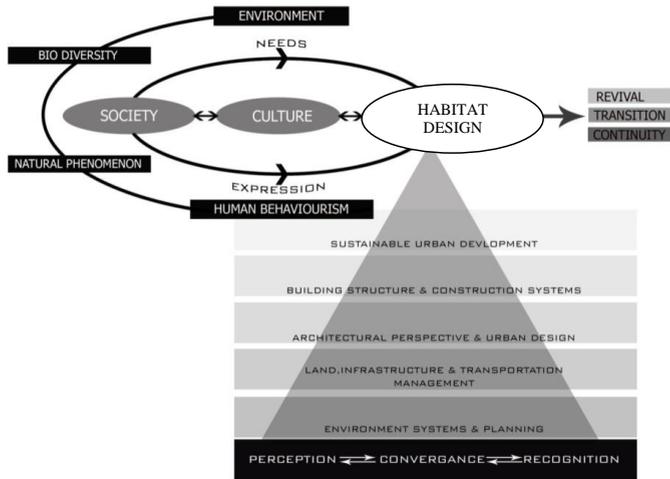


Fig. 7. Ideation – Critical Proposition Attributes

Source: Author

5. Conclusion

It is apparent that the impact of urbanism and the space envelops catering to various activities have a critical impact/influence on the inhabitants behavioural and sociological identity. With a better understanding of the urban realm as an end product of a process, it's possible to better comprehend the fabric of habitat design. The notion of urban realm requires understanding at vivid levels. The different perspectives of perception exhibited – by the inhabitants/occupants happens from different combination levels/abilities of reasoning and divergent responses to the context – built environment and functional requirements. A proper understanding and evaluation of the links and need for transect for relating these linkages is vital.

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*Theoretical Ideations, and Visual Illustration with cognitive reasoning cited in this Article are based on Minor Research Work carried out by the author at CEPT University as part of his Ph.D Program.