PROBABLE VARIABLES OF TRANSITION OF BUILT FORMS

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Abstract: Buildings are the best examples that a civilization keeps as a mark of its existence. They are representative of the era during which they are built in. They are the best translators of the kind of lifestyle that the community adopted and measures they took for making their habitat in lieu with the existing climatic conditions and overall support and infrastructures available. Every civilization in every generation made a signature statement with the buildings they made. This paper attempts to point out all the probable reasons that led to the changes in built forms in every generation. It also assesses the change in character of various elements of a building as we see today around us with the ones that use to exist around 150 years back. Their acceptance under the modern context cannot be denied. The paper emphasizes on old buildings which are in use and functional today. The variables are derived from various literature studies, case examples and inferences from the observations of periodic emergence of built form.

Keywords: Old & Modern Buildings, Time Span – 150 years and Variables of Transition.

Introduction: Old Buildings which are functional are symbolic of adaptation over a period of time that meets all its modern day's requirements. They are the buildings acclimatizing to the change of character stabilizing the needed equation to be kept with time. These buildings hold their importance such as being – historically narrative, architecturally dynamic and environmentally sound. These buildings and their elements are examples of the built-forms which stand intact due to their physical manifestation, design style adopted and materials used. They stand out as graceful landmarks, form beautiful vistas, impart a sense of belongingness to the society and give an identity to the city. Modern Buildings are direct results of people's taste, behavior and their requirements within the available parameters and context. The concept of comfort is changing and the buildings of the present era have a completely different look compared to their old counterparts. Modern buildings are dynamic forces representative of the urban change. They dictate the essential physical features of an urban area which also represents the social and economic adaptability of the society.

- The pictures here are indicative of the two extremes of the city's skyline. The picture on the left below shows high risers taking over in defining city's skyline today.
- The ones on the right show an interesting change in the use of a central open space in a public building. While the one at an old building is open to sky used for parking, social interactions and shares the additional footfall while the modern one is enclosed dependent totally on internal lighting and is more nuclear in nature.

- Prevalent style
- Techniques of execution
- Man power available
- Associated constraints

Evolution of both the form of building, old and modern revolved around

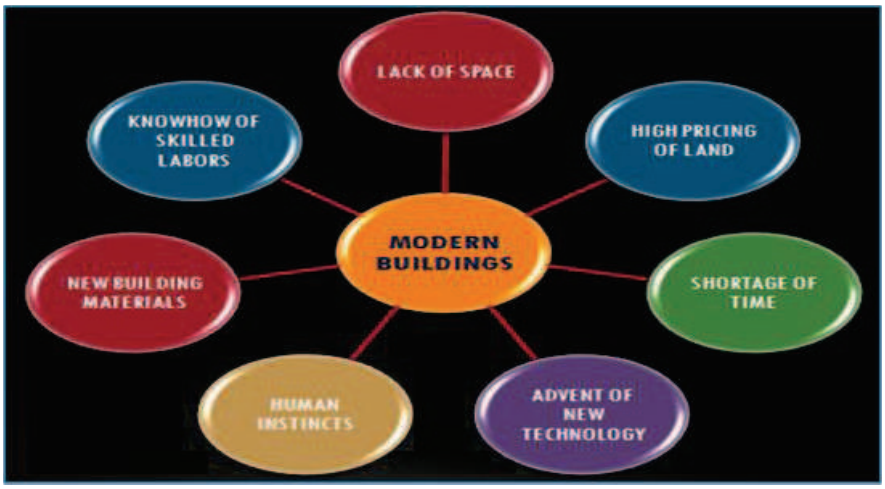

Fig. Variables of Transition

The whole set of reasons which lead to the transformation of built forms and evolution of modern buildings is summarized in the figure titled – Variables of Transition and elaborated subsequently. The concluding section discusses the rising concerns of environmental impacts of modernism and modern buildings.

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Fig. Use of locally available building materials.

Availability of Building Materials: The availability and accessibility of building materials was the guiding factor that dictated the construction in each era. For example we see structures made up of sandstone in the temples of Southern India and the use of marbles was in the temples and palaces of Northern and Western India.

Fig. Use of locally available building materials.

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The sandstone temple at Badami, Karnataka on the left and the extensive use of marble in the Dilwara temples at Mount Abu, Rajasthan on the right is testimony to use of locally available building materials.

Studying stonework and brickwork in old buildings can provide important information about its methods of procurement, production and construction. For example, the color, size, shape and texture of brick or stones are clearly guided by the availability of building materials.

Availability of New Technology: As society moves, technology take over and a direct result has been the change in concept and look of buildings in each era. Technological changes are also termed as enforced changes by some experts but people have been adapting to these changes with the given constraints in every generation.

- If we elaborate a few technological details, we may find, the brick masonry works that were found in old structures reveals whether it was hand molded and traditionally fired in a clamp with hardwoods, or if it was machine molded and fired in a kiln using modern fuels. Naturally available stones were however only hand molded and manually crafted. Similarly, the principal component part of masonry mortar, the lime or cement, reveals whether it was produced in a traditional or modern way. As a construction unit, brick and mortar further reveal something about the time, place and human variables of construction.

The shape of bricks, stones, the type of bond and mortars used, use of glazed or rubbed brick, decorative curves, coatings and finishes, different joints, striking and tooling gives the hierarchical relationship of the construction technique available at that point of time. 'Appropriate Building Technology' is referred as a process adopted to build the buildings sensibly using all local variables to suit its present and future requirements. Appropriate building technology keeps on changing as per the place and climate. Earlier, mostly the environment friendly buildings were designed to suit the best of comfort conditions but today due to the technological advancements, the comfort conditions are mostly attained by artificial means. Elements of the building like walls, both outer and inner, hold many clues to the technical evolution of buildings. Also the evidence of attachments on window casings can also be helpful in understanding certain technical aspects building changes.

Availability of Skilled Labors: There is an important saying in architecture – solutions grow from place. The knowhow and skills of the local labors or the craftsman played a huge role into the cause of evolution of buildings over the years. The workers had their

Fig. Workmanship of skilled labors.

expertise and motivations in executing their building making skills from their natural instincts and hence relied mostly on perceptions. But they made it a point to differ from the rest and keep a signature statement of their workmanship in each era. The corbellings and ornamentations were specifically meant to define the aura of the era in which they were built in. Today, creative revolution in terms with technology has taken over and the skill of the labors has taken a different dimension altogether. The efforts and dedication of towards each element that were so very evident in the old buildings has been taken over by the modern day's technology.

Availability of Space: Space happens to be one of the key factors in the process of building transition.Population increased many folds and the availability of spacebegan to have a direct impact as a constraint to the built forms in urban areas. Today's high density buildings don't have central courtyard, big verandahs, running corridors, thick walls or high

ceilings. The proportion of trees, landscaped areas, use of natural contours and water bodies has also drastically gone down. So with growing population and availability of land being a constant, the

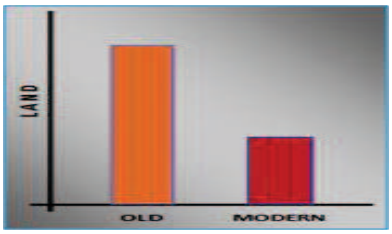

Fig. Space consumption

space per person is decreasing with time. The urban cities in particular have become the target of emigrants from adjoining sub urban and rural areas seeking employment resulting to problems such as urban congestion, increase of urban slums and squatters aided by ineffective housing strategies etc.

High pricing of Land: The total urban land area being the same and population on the rise, the escalation in the price of land area has taken a dynamic leap over the period. Every inch of space holds its justification which was not the case with the old buildings. Today, neither the land is readily available nor has the rise in price done any favor towards the designing of modern structures. As the need for land, food and housing increases rapidly, we are faced with the pressure of supply. The concepts of development are constantly re-examined to meet the demand. A constant need to create and promote new approaches for a more

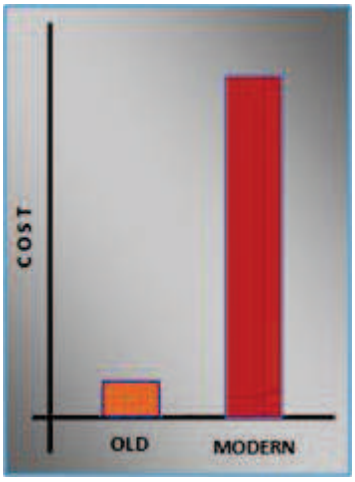

Fig. Land valuation.

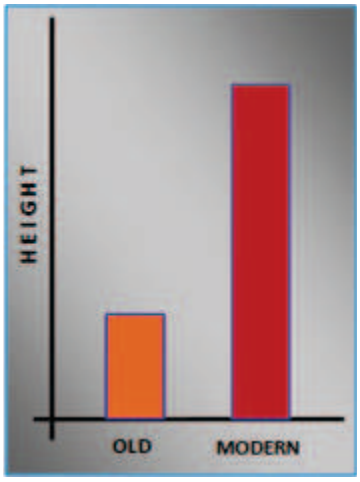

Fig. Vertical expansion.

accountable and sustainable future within the limits of availability of land works as a deciding factor in the transition of built forms that we see today.

Time as Constraint: Time acts as a deciding factor in completion of a project today. The deadline to complete a building is also indicative of the fact that elaborate thoughts are not given to all micro level design considerations of a new construction. For the old buildings the time taken for completion of construction was not

Fig. Constraints within time.

a rigid factor and we have examples of buildings being completed in as long as 20 years of time span.The importance of integrating physical factors with social and economic

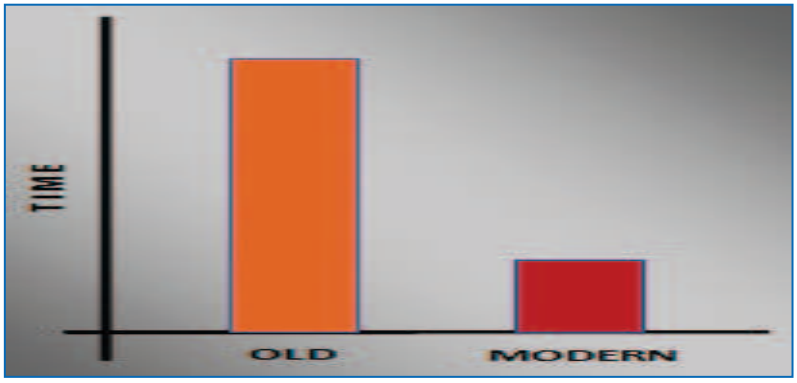

Fig. Time of completion

variables with time as a constant has resulted in the changing process associated with the transition of a city's skyline. While shaping up a modern building, one has to keep the balance of the modern day's requirements along with the budget and the technology available in a limited time frame. This was not in the case of old buildings.

Human Instincts: Time changes, a city grows and grooms and different priorities take over. As stated earlier, modernizations are direct results of people's taste - their requirements within different parameters available around that facilitate this change. Though human beings are adaptive in nature but human eyes seldom get tired of repetition. And as human minds are always at work, there is always a desire for experimentation and see something new.

Fig. Central Courtyard

Fig. Detailing.

The desire to assess the achievements with respect to what is going on in the contemporary world is all human psychology. A client's investment of trust with the designer has its own impact as well in terms with branding issues. Hence, we see results in the transformation of design in structures with every passing phase. The central courtyard, the detailing, the wall thickness, and the floor heights are the most significant changes to built forms that evolved in the last 150 years.

Fig. Wall Thickness.

Fig. Floor Heights

Conclusions: Change is inevitable and we no longer see the kind of buildings that we use to see 150 years back especially in old historic cities. The concept of comfort keeps on changing with the circumstances and the buildings are the best pointers to the changes adopted over the period of time. Traditional architecture sets an example for modern architecture that physical comfort is achieved by passive means. Irrespective of where the buildings are built and situated, the probable factors as identified in the paper stand same. What is essential is to take the wisdom of the past and if possible to formulate some conclusion and evolve a building form which will be more humanized, more climate responsive, more visually intricate and more eco-friendly buildings of tomorrow. Buildings are reflectance of the socio-economic, cultural, ideological, ecological and climatic factors that have shaped us over generations. Architecture expressed by the dreams and aspirations of a nation or a community stand as an expression of its core values, styles, typologies and adaptation. The above factors are representative of their history of evolution and development.

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