Digitalized Re-Rendering of a City’s Landscape

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1 Introduction

Pune has gradually evolved into a dynamic city of academic, cultural and economic importance from what it was as only a cultural hub with hum drum of any urban character. It is now the 9th largest metropolis in India catering to almost 3M (en.wikipedia.org) people and still increasing as people are migrating from surrounding areas to find a niche for themselves. One of the reasons Pune is getting popular is because of its comforting weather. Pune is today acknowledged as the knowledge and cultural capital of Maharashtra. The city’s character and growth patterns reflect the conglomeration of socio-economic structure, open space structure and its cultural heritage. The recent growth of Information Technology sector has been the impetus towards creating a multi-cultural atmosphere in the city.

2 Response to the Design Ideologies … Concept Generation

The challenge while formulating responses towards designing urban spaces is diverse. Should architecture take clues from the old patterns generating a compatible form or should it be futuristic? Should it respond to the natural systems, environment, history and context of the place and an evaluation of the existing urban pattern or should it form an identity on its own? With varied social and economic strata to behold, whom should the design be for? What methods would best suit the changing paradigms of design? Should the methodology rework existing methods within architecture – by using already available Computer Aided Design software in the experimental ways, or even by rewriting the structure of the software adapting and catering to a designer's need or could it borrow techniques from other industries or fields to generate new architectural strategies?

This is the stage where computational parametric designing plays an important role. Digital Designing can describe how architects can more effectively engage recent technological developments to produce forms of architecture that further generate feedback from their users and with the culture at large. Designers are at a constant pressure of keeping up with developments in cultures and technologies together adhering to flexibility in generating new techniques. Lately, with digital practices, these techniques having been inspired from other emerging fields like economic modeling systems, aerospace and automotive industries, etc to name a few.

Technologies such as 3 dimensional modeling; software may have inspired innovative designs at their foundation. Technological practices employ feedback from the environment into their design process rather than beginning with a preconceived design and applying it to a context. Thus, the traditional design process of concept, analysis and construction give way to incorporating perceptual feedback between analysis, intervention and exchange with
environment. Computers’ potential for generating real time feedback and a more dynamic interactivity between design and users is tapped’ (RAHIM 2006).

Architecture is generally conceived – designed and realized built in response to an existing set of conditions. These conditions may be purely functional in nature, or they may also reflect in varying degrees, the social, political and economical status of a city. The initial phase of any design is the recognition of a problematic condition and a decision to find a solution to it. The above example of a design by student from 4th year B. Arch, got inspired by a rivulet which passed by the site and wanted to use archipelago based massing. The design was developed by using parametric tools in the computers to have relative geometries.

Pune has distinctive varied political, social and economical strata and is growing rapidly towards a cosmopolitan culture. Above factors along with architectural language affect open and public spaces, where such parametric interventions can be suggested. One of such public spaces located at the center of the city is the Sambhaji Park on the banks of Mutha River.

3 Sambhaji Park and Its Extents as a Case Study

Sambhaji Park and its environs were selected as a case study owing to its significant location and the complexities of parameters. Defining parameters included the busy commercial street (J.M.Road) which has high end retail attracting young generation, proximity to one of the biggest bus transport terminus of the city and hence an inflow of commuters from various economic strata, the river edge conditions forming the most important connection with nature, and the cultural medley.
Apart from vibrant and dynamic surroundings, it caters to a variety of cultural gatherings in one of the oldest theatre “The Bal Gandharva Rang Mandir” which witnesses activities almost throughout the year. The space also witnesses intermittent activities like exhibitions, circus and cultural gatherings (Melas) once a year.

4 The Design Process

In this case, the study area was divided into four study zones depending on the complexities and uniqueness of the parameters they offered. Each parameter was then assigned a definitive value, depending on its significance. The existing conditions were then documented, defined with respect to its context and analyzed.

4.1 Zone 1: River edge as an open space

The defining parameters included:

1. Value as a significant open space
2. Confluence of two major developments (old and the new)
3. Pedestrian and vehicular connections with a heavy traffic load
4. Ecological zone and a riverine habitat
5. Visual Architectural character of the city skyline
6. Informal activities like food joints, Mela, Ghats and parking spaces

A value of these parameters combined with design concepts evolved dynamic sketches that generated prototypes of recluse within these zones. Following is the detailing of one of the model with its process which shows how the entities have strong inter-relationships through which different diagrams are prepared. These diagrams further follow a system of transformation from 1D to 3D suggesting opportunities of habituation.

Fig. 4: Stage 1: The base parameters like aesthetics and functions are combined generating series of graphics and suggesting deformation of fabric

Fig. 5: Stage 2: Addition of new parameters create reaction amongst the entities formulating more dynamic fabrics suggesting habitual functions

Fig. 6: Stage 3: The frozen iteration from the sequence showing a harmonious frame between two extreme parameters like the old and the new city

Fig. 7: Model by Isha Rowtu (Student from 3rd year B. Arch, BNCA)
4.2 Zone 2: Traffic Corridors

This kind of space usually displays a typical urban character in the form of its dynamic skyline and a continuous movement pattern. Surrounding land use is predominantly commercial, at times a mix of commercial and residential. The skyline depicting a Doppler effect suggested the most defining parameter while attempting to design a recluse for this zone.

Traffic Corridors_Urban Connector: Workshop @ BNCA on Digital Architecture.

Fig. 8: Above: J. M. Road Skyline sketch, HRHC Workshop, BNCA

Fig. 9: Below: Doppler Effect, Graphic

Relationship between open and built spaces has perceptive pattern congruent to that of Doppler Effect. With that as a pretext, the parameters for the following model were purely patterned geometry.

Fig. 10: Model by Meenakshi Dravid (Student from 3rd year B. Arch, BNCA)

4.3 Zone 3: Urban Plazas

The space necessarily needs to be an interactive space for the young generation with a contemporary, dynamic and lively expression. It could cater to many informal activities like just lounging around mostly used during nighttime. The activity specifics could include shopping, recreation and a passive recluse. The urban plazas are places where different activities can overlap/merge. These crossroads can be mapped with public movement and
interventions generated from cultural/social contexts. Hence these diagrams suggest responsive areas (both positive and negative) which are considered as parameters while generating design solutions. Such small interventions in culmination bind the spaces at a larger scale. The common thread lies in the cultural importance, social awareness and modernity at par. These spaces have been designed from the data that is gathered with mapping exercises and through a post designing methodology where a strong perception of public domain is considered.

Fig. 11: Possible Interventions of Prototypes
Projects: Bhat Amulya, Wasunkar Priyanka, Dutia Bijal, Kudale Priyam, Puppal Akshada, Changedia Dharti, Raichur Mayuri, Naik Netra (Students from 3rd Year B. Arch, BNCA).

5 Application of these Methodologies

The attempt of redesigning these kinds of spaces was a small endeavor in designing spaces that are more definitive. At a city level, the possibilities are countless. The identification of
such spaces commence with the personal open spaces within a plot area, transport corridors of varied scale, formal and informal gathering spaces in the form of Maidens (town square, http://en.wikipedia.org/wiki/Maidan) and public parks, interactions of natural elements with the built forms, in short, a complete comprehensive study of open and built spaces also portraying a typical character of the city.

Adding to these dynamics is the regulating governance, people’s participation and perceptions, time management and economic policies, a realm that ventures into urban and town planning. A Landscape Architect plays a major role in working on an integrated approach where public sector, the development world, stakeholders, architects and urbanists work together to develop integrated concepts that answer questions beyond just forming an artistic expression of architecture. They can help making landscape truly efficient in order to solve environmental problems that are social, ecological and political in order to create healthy livable environments within the city.

6 Conclusion

This presented work has tried to detail out a new designing methodology, geo designing, where project is conceived from conceptualizing to developement of design through simulations in the computer. These simulations are generated through a series of systamtic programming and thus helps a designer achieve more iterations in less amount of time.

Taking a culturally strong site for intervention that can reinterprete the urban utility with parametric designing has been the main aim of the projects presented above. With reference to Pune city (and that may be true for any other Indian city as well), these parameters change dramatically for every sector or block or at times even within the blocks. Generating prototypes is also governed by the parametric calculations within a time span. With the technological advancements and the cultural globalization, designing a space resilient to change is challenging. At any given time, the design process is always in transition with the changing paradigms and the bigger the scale, the greater these complexities. This paper hence tried to focus on a scaled projects like townships and expansion of the cities where through design approach we can graft urban characters. These modified grafts generated would represent a strong amalgamation of expression of a designer’s approach and the existing conditions proposing unified variance.

References

Ching., F (1996), Form, Space and Order.
The International Review of Landscape Architecture and Urban Design (2010), Topos, 73, City Regeneration.