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CREATING BREATHING SPACES WITHIN THE EXISTING FABRIC OF OLD CITIES

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Abstract

Humans constantly endeavour to redesign the habitat they live in to provide more comfort, ease, and better living conditions. However, in attempts to maximize this comfort, the basic needs and necessities of the space are lost and we end up improvising the same. Historically, settlements were always surrounded by large spans of forests and farms, providing ample open spaces. However, short sighted design, owing to rapid urbanisation, has led to a paucity of such open spaces in modern cities. The problem is particularly severe in case of the core areas of Indian cities which are characterised by attached houses - individual building units sharing a common wall and terraces accessible from adjoining premises. However, the attached houses present a unique opportunity to convert the intriguing pattern of terraces in to urban green areas and public spaces. This paper proposes a design and implementation for such terrace open spaces in old cores of Indian cities.

Keyword: *Old cities, Connected terraces, Breathing spaces*

1. Introduction

Cities have generally outgrown from the core areas. But, in India, as the cities sprawl, developments and policies usually focus only on newly merged areas. These new developments are well planned and provided with better infrastructure and amenities contemplating needs of the day. On the other hand the neglected city centres in the oldest parts of the cities, have started decaying. They have become concrete jungles plagued with homes to congestion, overcrowding, pollution and hence poor quality of living. The tightly packed attached housing in the city centres occupying every inch of space leave no opportunity even for neighbourhood level public spaces. City centres are also characterised by multiple factors such as involvement of multiple stakeholders, high land values, heritage structures, ownership issues, and political interests; hence they are difficult to intervene. Deependra Prashad and P Narkhede

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(2010) have also addressed similar problems of old cities in their works *New Architecture and Urbanism: Development of Indian Traditions and Revitalisation of old core of Pune with special emphasis on housing*.

Revitalization is imbuing new life and vitality in old, deprived and derelict urban areas. It brings back new life to the city by stimulating various economic, socio-cultural, physical and environmental activities. As far as building stock is concerned, revitalization strategies aim at upgrading living conditions ensuring the maintenance of the property. Revitalization does not necessarily mean entire demolition and redevelopment. It is just improvement in the existing conditions by changing certain aspects of neighbourhood which is in state of despair.

Conservation of the unique old fabric of the core, yet making available facilities to meet the needs of today in the pace of urbanization is a big challenge! Hence this study focuses on how one of the issues regarding lack of open spaces could be tackled and proposes strategies for its revitalization.

1.1. RESEARCH PROBLEM

The tightly packed attached housing in the city centres means that it is impossible to pool land to create public parks or gardens. At the same time, the intriguing pattern formed by the settlements in the core city also presents an opportunity in the form of connected terraces. Therefore, there is a need to look at the existing structure and typology of terraces to analyse if they fulfil the needs of open/green spaces if transformed accordingly.

1.2. RESEARCH OBJECTIVE

The objective of this research is to assess if terraces in the core city areas can be translated to open and green spaces.

1.3. RESEARCH METHODOLOGY

The following chart gives a glimpse of the methodology used for conducting the research work. Research Questions were identified and a methodology was devised to answer every question as seen in the chart below.

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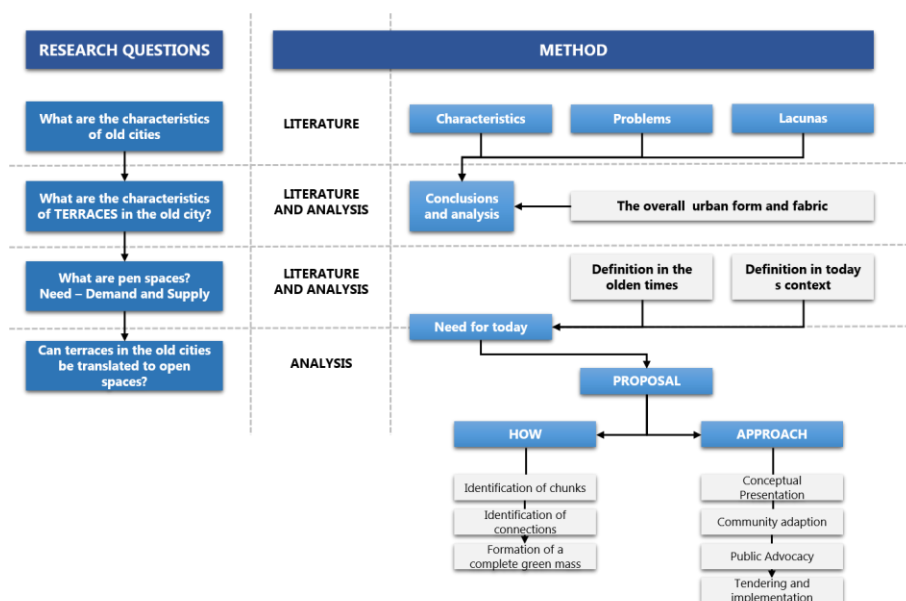


Figure 15: Research methodology followed for conducting the research

2. THE OLD CITIES

India today, is known for its rich culture and heritage that has been in existence for centuries. Every state, every city, every street has a story to tell about its past, and this story is effortlessly told by the ancient structures which it contains.

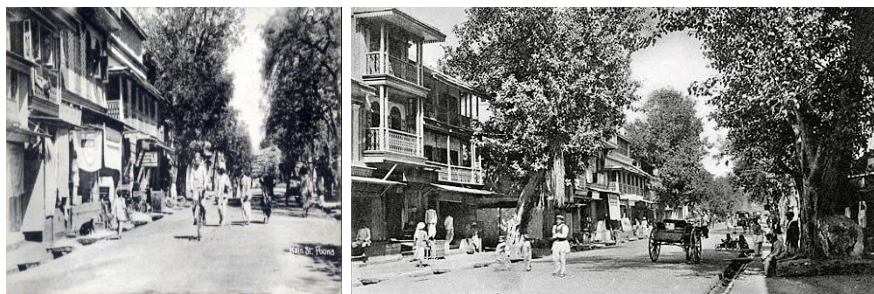


Figure 16: Some glimpses of the core city during olden times

At the same time, it is true that it is very difficult to see generality in towns, because towns in India are a world in themselves. Besides that, in general the towns are unique individually with their own set of concerns that no two cities can be categorised together. Nevertheless similarities are observed in organisational patterns and characteristics.

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In context of the core areas, the closely packed structures sharing the same walls and often the front yards or internal spaces signified social interaction, united joint families, and a healthy and secure community living. The urban form of the settlements here, is like a maze of two or three storied structures, placed along narrow lanes and pathways with little or nil open community space. (Shinde, 2012-13)

2.1. EFFECTS OF URBANIZATION

Most cities have a core area which gives an identity by way of its architecture or activities it caters to. Without doubt, they are a critical part of legacies. But at the same time, a common man easily tends to side line this historical importance when it comes to personal or basic needs. The purpose for which they were built may not satisfy or cater to the needs of today. Urbanization favours this very fact and people tend to ignore the traditional way of living lured by westernization and the promises of comfort that comes along with it.



Figure 17: The existing prevailing condition in the old cities

With the growing population, increase in traffic and congestion, the already constrained older core areas of the cities have become the most un liveable spaces. In contrast, newly developed areas have planned gardens or green spaces or at least setbacks between the buildings to breathe through. But old cities with openings on just 2 road sides have limited ventilation. At the same time, these are also spaces with least green cover. (Khadpekar & Rao, 2008)

2.2. THE TERRACES

Buildings in core cities, in spite of being individual houses most often share a common wall. There isn't a huge difference amongst height either, which varies in a range of two to three storeys. This automatically leads to easy access across terraces. Some houses had deliberate connections in terms of staircases to climb from one place to another while most others were differentiated by parapets. This accessibility is very profoundly showcased in various Hollywood and Bollywood films.

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The terraces were and are still used by women of the house for kitchen work (drying spices, grains, *papad*, making pickles, etc.); though the present day use has significantly decreased with the chaining economic markets. The terraces were also used for sleeping during summers when temperatures soared. This habit also declined with the age of air conditioners and lack of interaction and communication between neighbours. Only festivals like Uttarayan or Diwali make the complete use of the potential of these spaces. Otherwise they remain underutilised for throughout the year.

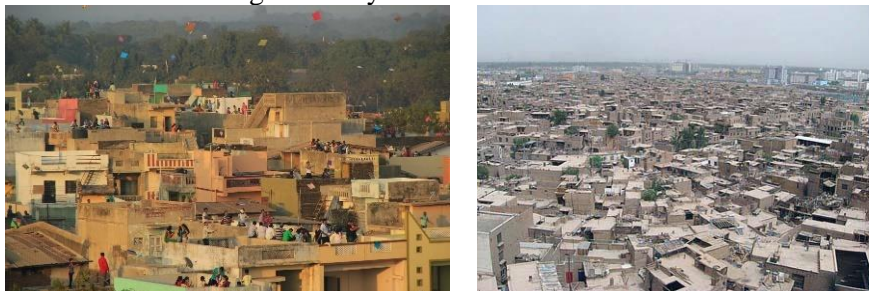


Figure 18: The unique pattern created by the upper layer of the settlements in the core cities.

3. PUBLIC SPACES

Public spaces are fundamental features of any city. They are spaces used for entertainment, leisure or relaxation. They are the living rooms, gardens and corridors of urban areas. They serve to extend small living spaces and provide areas for social interaction and economic activities, which improves the development and desirability of a community.

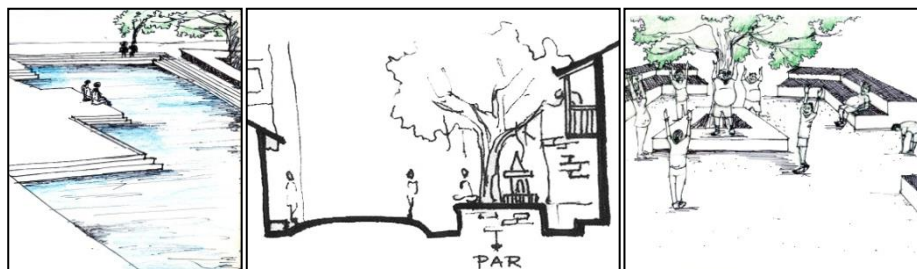


Figure 19: The different public spaces that existed during ancient times

Upto 19th century, public places were the external living space like *katas*, *taalims*, *ghats* and *pars*. Small places like sit outs under a tree, common hand pumps / stand posts, *verandahs* or front yards acted as public spaces that then existed which sought leisure and interaction. *Talims* were mainly built for exercising. *Paars* functioned like a village square, where there would be a

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raised platform around venerable tree with a small shrine beneath. *Ghats* were built along the river mostly near the temples. The space between individual buildings became the *kattas*. These spaces of the old days have also been illustrated by A Deo (2007) in his work *Old city revitalization: Case study of Pune, Ahmedabad*.

On the surface, it's easy to look at great public places and see them as nothing more than well-designed physical locations. But beneath the surface, these places can be so much more. They are locations where community comes alive, where bonds among neighbours are strengthened and where a sense of belonging is fostered. They are locations that spark economic development and drive environmental sustainability.

Despite their importance, public spaces are often poorly integrated or neglected in planning and urban development. However, more and more research suggests that investing in them can create prosperous, liveable, and equitable cities in developing countries. The lack of provisions for public spaces hampers economic activities, pollutes the environment, and reduces social stability and security. Public spaces should be considered a basic service, with the same priority as transport, water and sanitation which communities often primarily focus their resources on. (Khadpekar & Rao, 2008)

Public spaces could also to a great extent be merged with greening of urban spaces. Green Infrastructure can be broadly defined as a strategically planned network of high quality natural and semi-natural areas with other environmental features, which is designed and managed to deliver a wide range of ecosystem services and protect biodiversity in both rural and urban settings. The green cover as prescribed for any city should be at least 33% of its landuse but the chart below shows Indian cities lie nowhere even closer. At the same time, old city areas with an even higher density of built mass show no signs of green vegetation.

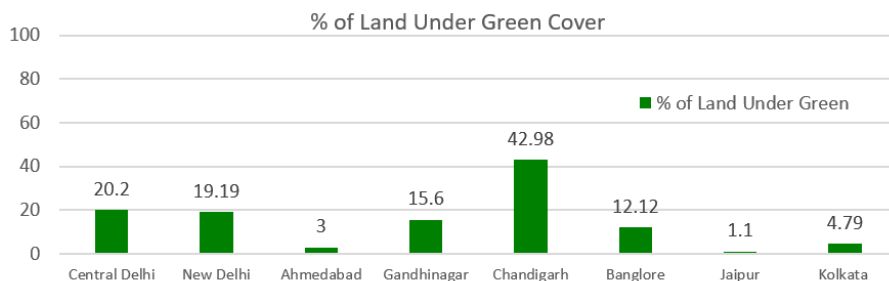


Figure 20: Percentage of green cover across different cities in India

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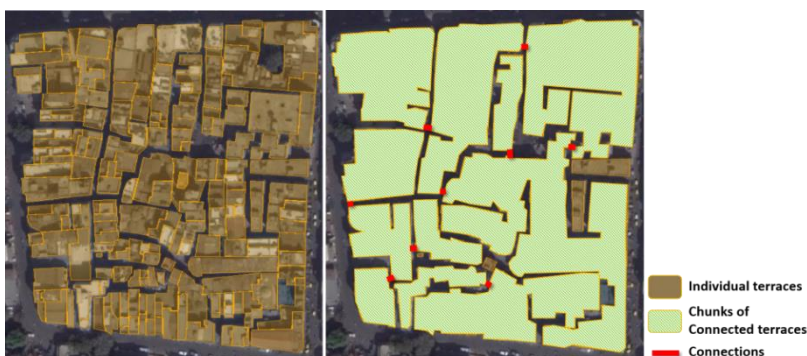
With the realisation of depleting green cover, first mentioned as early as in the 19th century, the term “urban forestry” got introduced. But it is almost after decades that potential and substantial role in making cities more liveable and sustainable in the long-term has been recognized. Hence, the need to not only provide public spaces, but also green vegetation to add on to the environmental quality of the space.

4. TRANSLATING OLD CITY TERRACES TO PUBLIC SPACES

Revitalizing the core city areas, yet conserving the unique existing fabric but at the same time maintaining its functionality in terms of both the present and the future is the need for today!

The urban form of the old cities has a very interesting layer on the top made by interconnecting adjoining spaces. The varying heights of these spaces adds on to the character with an additional element of surprise and curiosity. One small terrace may not even size up to a perimeter of 100m. But, by connecting terraces the opportunity of enhancing the utilizable spaces increases manifolds.

The idea is hence to identify chunks of attached or connected terraces and deliberately convert them to terrace gardens. The interconnections could be made in terms of vertical elements like stairs and ramps. Spaces sharing similar heights could be levelled to a certain extent to achieve larger spaces which could act as lawns or gardens. Smaller terraces could be clubbed together to achieve decent amphitheatres while others could have covered sit outs/gazebos. Trees could be planted at intervals to provide enough shade, but at the same time letting in enough sunlight such that routine works remain unhampered. The parapets could be treated separately as barricades of flower beds or even creepers falling down creating a green wall for the built mass below.



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Figure 21: Formation of a green network using existing individual terraces

After an initial phase of developing such individual chunks, small bridges could be constructed between them. This would help connect the whole area into one green network instead of smaller units accessible to one and all.



Figure 22: Before and After images to depict how the exist urban form could be revitalized. The images shown below are purely conceptual and largely only to depict the whole mass that could be developed. The proposed green space would include a mix of paved/unpaved/green areas along with sit outs, steps, amphi theatres, trees, shrubs and plotted plants.

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4.1. ADVANTAGES

Ar. Le Corbusier in his five elements of new architecture talks about the roof garden, restoring, supposedly, the area of ground covered by the house.

The whole idea could help maximise the capability of the building in a sustainable way. Greening of roofs would enhance micro climate and in addition to the social and economic benefits of reducing energy and CO₂ consumptions, buildings with highly visible greenery are profitable not only for its owners and residents but also for the community, inspiring and encouraging people in cities to install more greenery onto their buildings. Rooftop vegetation minimises heat gain into the building and reduces heat island effects in the city; facilitates birds and butterflies controls rainwater run-off; acts as an absorbent of city sounds; creates an attractive look; and on an overall count, conserves energy. The green roofs can also help in rainwater harvesting in such a way that the rainwater collected can be used for landscaping and for other purposes within the premises.

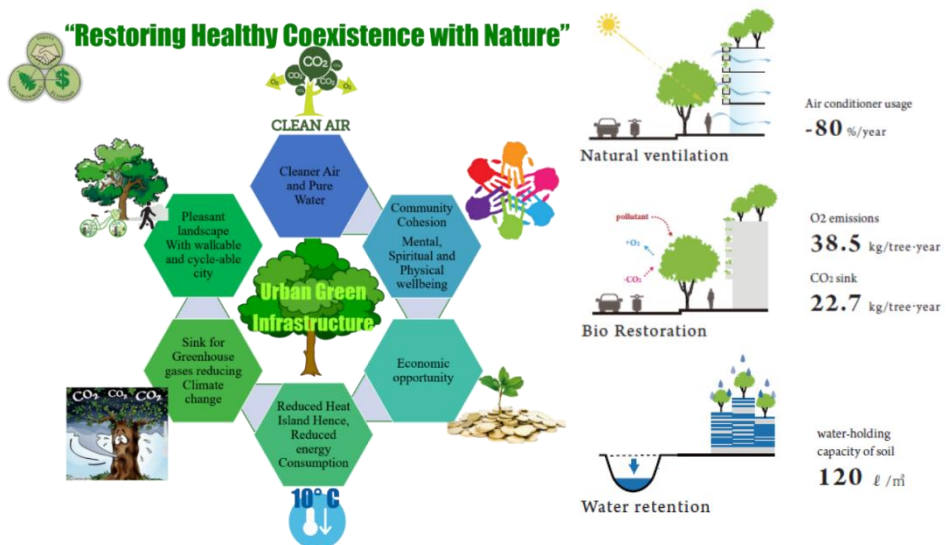


Figure 23: Advantages of urban green and green roofs (Sawa)

The next stage would be to understand how these terrace gardens could actually be constructed. It would be important to especially understand the technical aspects of what would be a typical cross section, what would be the multiple layers involved such that the built mass below is not affected, what kind of trees and plants should be planted and what would be their effects on the micro climate of the surrounding. It would be important to study works of certain architects and urban designers who specialize or deal with terrace gardens. For example, Ar. Hidetoshi Sawa, Ar. Young Il Lee, Ar. Chitra Vishwanath.

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Though the scope of this study does not include the above mentioned technical details, some studies have been described in the section below.

House for Trees, Ho Chi Minh City, Tan Binh District has been designed by Ar. Hidetoshi Sawa. The house is like a prototype for construction of terrace gardens for surrounding structures to stand up. The photographs below give a glimpse of the structure with certain images explaining its construction techniques.



Figure 24: Case of House for trees, Hidetoshi Sawa (Sawa)

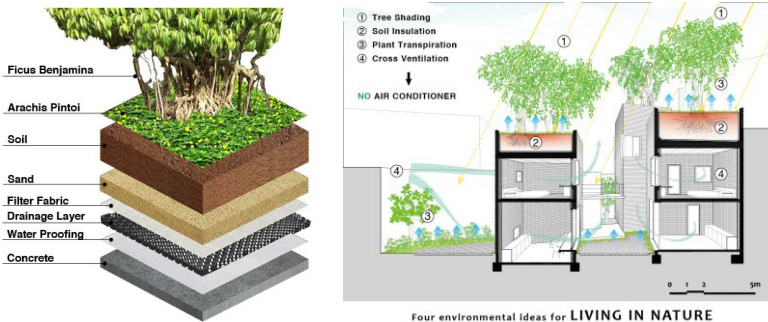


Figure 25: A typical cross section required for plantation on roof tops. (Sawa)

Ar. Chitra Vishwanath also talks about unutilized boring terraces that could be utilized for urban farming. She has replicated the same in her own house. Exploring ecological architecture, she talks about a similar concept in her term “smart roof” for green terraces in the city of Bangalore.

The High Line in New York built on an elevated disused section of railroad is also a good example for converting dead spaces into a greenway.

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4.2. CHALLENGES AND APPROACH REQUIRED

Vertical gardens as an idea has only been experimented on individual buildings. Urban greening is being practiced these days, but old cities still remain untouched. When there is so much scarcity of land availability on ground, vertical gardens in the form of chunks of open spaces could help increasing green cover of the city.

It would be necessary to follow an appropriate method of dealing with implementation of the proposal as it requires intervention in brown field areas involving multiple stakeholders and private owners. In the initial stage, a conceptual presentation could be drafted explaining the design and technicalities of the proposal. Alongside, terraces of public and commercial buildings could be selected to set examples of how terraces could be revamped. Having set a prototype, the second stage would be discussing the proposal with the existing residents of the locality to encourage them from doing the same. The core cities having a large percentage of dilapidated buildings very regularly have new construction taking place; this would rather be favourable for the proposal. Owners of these buildings could be given incentives to open up their terraces for public use, and buildings could be designed to take the additional load. Existing buildings structurally weak could have basic renovation done to accommodate seating areas, potted plants and things alike.

Once such chunks of terraces get formed, connections in terms of bridges could be identified to join them leading to the formation of a complete network of public space for the area!

The scope of this paper is limited to the idea of terracing at the conceptual level and hence does not discuss the concerns that would arise during execution and implementation. The major questions that would need to be addresses are - who would do it? Whose spaces would be taken up? Would they be open for both the residents and outsiders? How to control access of strangers or miscreants in adjoining private properties? Other challenges would include willingness and approval of people, security concerns and structural issues (as the existing built mass may or may not be able to take so much of an extra load). Also, with varying heights of buildings, a critical design intervention would be making the network universally accessible.

5. Conclusion

Our world today needs an anchorage of the past and an insight for the future. As time passes the present will become the past and the future which is talked about every now and then will become the present. The future can be achieved the way we want to. It is up to us to choose to cherish the past in the present

and know that the structure we spend our time in, will still be an enchanted part of our lives in the future.

The design proposed here is an attempt to honour the past in terms of forms and expressions, familiarize with the present in terms of functionality for today's world and appeal the future keeping its relevance intact and hence become timeless by design. This design provides secured breathing spaces which will remain unhindered through the passage of time regardless of the changes which will take place in the society. When every public space and structure settles in as an inconspicuous part of our daily life, these spaces would promise to be a fresh and new part of daily routine. New things come and seldom is it realized when the new turns into old. But these spaces promise to stay evergreen through generations to come. In the crowded hustle-bustle of the old city, it promises to be a new place of peace – a place to breathe!

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