

Essay

Building a Sustainable Ecology - Housing and Architecture in Mumbai

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Shared common spaces bring people together, they comfort and they rejuvenate. They give people a sense of belonging and commonality of purpose. Shared public spaces reflect the dignity accorded to the collective - to collective effort and control. In villages, towns and cities, these common spaces add to the quality of community life. Similarly, in environments such as buildings in larger towns and cities, spaces which connect different public amenities and spaces, should be developed to reinforce the value of participation and sharing. Such spaces are extremely important and essential today when urbanisation and privatisation has considerably downsized and undermined them, thereby seriously affecting overall social development and community life as our cities expand. Cities are constantly being divided and spaces being barricaded in multiple forms of discrimination and exclusion. We must aim towards building more inclusive and accessible cities for our masses.

This brief sets the platform for the interrogation and subsequent suggestions that are made in this paper.

Mumbai's Development Scenario: A brief background

Mumbai city is unique in many ways such as having a large proportion of its landmass (more than 50%) covered by natural areas. It is also one of the few cities in the world that boasts of a National Park within its city limits. Mumbai city has a total land area of approximately 454 sq.km which includes both its habitable areas as well as its vast assets of natural areas. These natural areas include lakes, pond and tanks, rivers, creeks, nullahs, wetlands and mud flats, salt pan lands, mangroves, beaches, promenades, hills, forests and the Sanjay Gandhi National Park. Cumulatively they add up to almost 140 sq.km of land area. With another 40 sq.km under airports, railways, defence and ports, thereby leaving around

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274 sq.km as 'build-able' land for the city's construction development. Of these 274 sq.km only about 40% i.e. 110 sq.km is the approximate land under residential occupation. This effectively means that the city's entire population of close to 13 million people occupy less than 30% of its entire land mass with a density of 118,000 persons/sq.km, thereby making Mumbai one of the most densely populated - if not the most dense - cities in the world.

Reading into these number of large areas under natural assets, one might argue that Mumbai has a plethora of 'open' land and therefore these should be exploited for further construction- several governments and bureaucracies have pursued this concept over the years to unlock more land for construction within the city.

While the large extent of natural areas and open spaces might seem encouraging, the numbers are somewhat misleading. The natural assets are key to the environmental balance of the city. These natural areas regulate air quality, as well as protect against natural disasters such as floods and sea level rise. The large areas under tree cover and forests are an incredible carbon sink, and essential for combating

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the increased levels of pollution generated from cars and manufacturing industries, not to mention the building industry. The mangroves are a natural defence mechanism that are unfortunately hugely undervalued by the city - and rampant dumping and reclamation has led to large scale reduction of mangroves along our coastline - like the fate that most natural areas meet. Apart from these natural areas, in Mumbai there are 4 types of accessible open spaces as categorised in its Development Plan -- recreational grounds, playgrounds, parks and gardens-- commonly referred to as RG, PG, G and P. If one considers the land area under these types of open spaces along with our beaches - Mumbai sports one of the lowest ratios of open spaces to inhabitants anywhere in the world - an abysmal 1.1 sq. m of open space per person. Compare this to other world cities such as London - 31.68 sq. m/person, New York - 26.4 sq./person, Tokyo (which is considered to be an immensely dense city) -- 6.1 sq./person, as well as other Indian cities such as Delhi - 12.4 sq. m/person and Bengaluru-- 2.01 sq. m/person, and we see just how bad the situation in Mumbai is. These low areas of open spaces are a direct consequence of poor planning and lack of an urban design vision for the city. Open spaces are a key element to regulate densities within neighbourhoods and thereby provide a higher quality of life and everyday living.

Housing and the City

The comprehension of open spaces gets even more skewed when you look at the patterns of habitation in the city. Out of the 13 million inhabitants, nearly 6 million people

live under inhumane housing conditions in informal settlements or slums. These slums occupy merely 30 sq.km of land, with an average density of 200,000 persons/ sq.km. Open spaces within these communities are hard to come by. With 6-10 people packed into single rooms of 100-150 sq. ft being a norm, the very idea of social distancing in times of pandemics is indeed impossible. The housing need for this majority of the city's population has been ignored in the development agenda prepared by policy makers and governments over the years. It is no secret that Mumbai is an unplanned city and the development and growth of the city has been ad-hoc and arbitrary. Interestingly, the very first signs of urban planning in Mumbai had emerged as a response to the devastating plague in the late 1890s - one that caused a very high number of deaths and consequently saw the working class masses flee the city. Even then the poorest neighbourhoods were the ones that were completely devastated. At that point, commerce and industry was threatened by this mass exodus and this forced the mill owners and other city elites to question the state of housing and the consequent sanitary conditions that greatly impacted their businesses as seen in the years after the plague. This, along with a brief yet accurate synopsis of housing for the poor in the city of Mumbai has been explained in a recent article published in *The Wire* by Mumbai based urban planners Hussain Indorewala and Shweta Wagh titled 'After the Pandemic, Will We Rethink How We Plan Our Cities?'

Yet, over a 100 years later, the condition of housing for the masses in the city is in worse condition, and these have been amplified further amidst the Covid-19 pandemic. The current shortage of affordable houses in the city crossed a staggering 1 million units as estimated by the government in 2018. The faith invested in the private sector post 1991- when our country embraced economic liberalisation - has failed miserably. In Maharashtra, the Slum Rehabilitation Authority (SRA) was set up in 1990 which subsequently launched the Slum Rehabilitation Scheme in 1991 with an aim to create a 'Slum-free Mumbai'. In 1996 the Bal Thackeray led Shiv Sena came to power on the promise of providing free housing to all

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slum dwellers in the city by means of this scheme. The basic premise of the scheme is that the SRA ropes in a developer from the private sector to take up the redevelopment of a particular slum, for which a basic consensus within the slum community is required – initially it was 75%, which has subsequently been reduced to just 50%. The developer offers all eligible slum dwellers a free housing unit of 330

sq.ft. (this was 225 sq.ft. when the scheme was first launched, and recently the Shiv Sena led Maha Vikas Aghadi announced increasing this to 500 sq ft in Nov. 2019), and as an incentive the developer is allowed to construct and sell an equivalent area in the open market for

profits. This scheme has been marred by controversies since the very beginning - marked by complaints of corruption, arm twisting and nepotism over the last two and half decades. Two significant negative outcomes of this scheme have been that (i) this has led the State to absolve itself of its basic social duties and responsibilities of providing affordable housing for the masses, and (ii) the SRA simply operates as a facilitator for the development rather than a planning agency and entrusts all planning and design to the developer. This has hugely compromised the quality of housing and spaces that are produced for the rehabilitation component of the projects. The common trend noticed is that the existing slum dwellers are squeezed into high density packed buildings that are built on a fraction of the original land area, while the majority of the land is then developed for high income housing for sale in the open market.

Slum redevelopment and the mindless increase of FSI

With Floor Space Index (FSI) as the primary tool for planning, policy makers believe more housing can be created within the city and still ensure profitable developments in order to attract the private sector. FSI is the ratio of how much can be built/ constructed upon a specific piece of land. The FSI for SRA projects used to be at 2.0 and has been modified several times to 2.5 and 3.0 – basically meaning that developers could build up to 3 times the area of the land. In the latest Development Plan of the city, this has been increased to 4.0, thereby further increasing the density in housing to a highly untenable and dangerous level. The ill effects of mindlessly increasing FSI has been captured in great depth in an article by Mumbai based architect and housing rights activist PK Das titled ‘Sustainable Housing Can’t Slip Under the Radar Once the Covid-19 Crisis Subsides’ published in *The Wire* in April 2020.

Without any impetus or focus on planning and design, the city’s landscape is getting defined by pencil like towers that are cropping up as a result of the piece-meal approach adopted by the SRA in handling the redevelopment of slums. Lack of a larger vision ensures that small pockets of slums are taken up individually for redevelopment, leading to the situation of high FSI being consumed on very small parcels of land. This approach is also leading to further fragmentation of our city’s fabric. With the entire focus on profitability, housing is considered a business to simply meet rehabilitation numbers, while completely overlooking planning that should make provisions for open spaces and social amenities such as community spaces, learning centres, healthcare facilities and more, that are key to building and sustaining a community. These open spaces and social amenities together form the ‘Commons’ that constitute the backbone of development and ensure a higher quality of life than that experienced in slums.

The typology of buildings emerging through these SRA schemes is truly deplorable – 18 to 21 storied buildings stacked like railway compartments merely 3 meters apart with no consideration towards the quality of light and ventilation for the houses in them. These buildings in fact have become vertical slums – with no dignity accorded to the individual or to the community. This has only caused a further ‘slummification’ of the city. Completely unsatisfied by the quality of the new housing, slum dwellers are seen abandoning their new homes and moving back to other slum areas thereby making the entire process counter-productive. The slow speed of delivering new housing coupled with poor quality of the developments has caused a proliferation of slums in the city. The skewed nature of development and production of a housing stock that doesn’t cater directly to the demand of the market is evident in the fact that despite the massive shortage of housing in the city, there are over 200,000 unoccupied units in new developments.

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Way Forward

1. State’s Responsibility

The State needs to be step up and take responsibility for providing social housing for the masses. The myth that the private sector will perform the social good and work of the state has been exposed over the last 30 years, and this failure has directly contributed to the proliferation of slums. It is also a myth that the city’s population is constantly growing as was the case earlier – studies show that since the turn of the new millennium, the population of the city had flatlined, and in fact started dropping from the year 2010 onwards. Reading into the current land occupation patterns in the city shows that two of the largest land banks in the city are (i) lands under slums occupation – approximately 2660 hectares or 27 sq.km and (ii) lands that fall under MHADA (Maharashtra Housing and Development Authority) – approximately 1520 hectares or 15 sq.km. Together they add up to over 4000 hectares (40 sq.km) of land in the city- almost 40% of the tenable 110 sq.km. This gives the State the incredible opportunity to promote equitable and affordable housing for the city of Mumbai on land under their jurisdiction. Through the exercise carried out by Mumbai based architects PK Das & Associates it has been estimated that through comprehensive planning and after rehabilitating the existing population residing in these areas, a total of 1 million additional affordable homes can be generated through redevelopment of both these lands using the prevailing FSI of 4 which is allotted to these projects, while achieving the aforementioned

town planning guidelines. For a city starved for affordable homes, this seems to be a plausible way forward.

2. Comprehensive Planning of all Slums

For a sustainable future of affordable and accessible housing in Mumbai city, fundamental changes need to be made to the erstwhile SRA policy. The SRA scheme needs to be re-looked at in terms of engaging a larger, more comprehensive, citywide planning for slum redevelopment while discarding the piece-meal and pocket based development that is currently in place. This comprehensive planning of slum lands will enable an equitable distribution of people and regulate densities within new development projects so as to avoid congestion and the pencil like towers usually seen in smaller plots. This process will also influence a larger urban design and housing vision for the city – one in which the way forward would be a larger plan rather than ad-hoc growth.

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Open spaces and amenities can be provided in adherence to the URDPFI (Urban and Regional Development Plans Formulation and Implementation) guidelines. An exercise carried out by architects PK Das & Associates shows that through comprehensive planning, it is possible to rehabilitate the existing slums population in G+9 towers while providing all the open spaces and amenities as prescribed by Town Planning guidelines, while still creating a huge surplus of new affordable housing in the city. The exercise shows that we do not necessarily need to build high rises citing ‘lack of space’ for development.

Comprehensive planning will also ensure the production of a dynamic built environment in the city-- buildings with multiple uses distributed across layouts thereby giving rise to varying densities as well as varying activities through the space. Communities are built over decades by way of appropriation by the people living in them and the consequent social structures built into these spaces are complex. These social structures contribute towards transforming a ‘space’ into a ‘place’ for people. This is why every community is unique in its own way. These complex structures within communities allow for multiple uses and activities such as small businesses, production, manufacturing as well as living to co-exist in harmony. The current models of redevelopment have led to the standardisation of housing layouts as well as housing units across projects. The new standardised 330-square feet units completely disregard existing occupation patterns, and thereby lead to the destruction of livelihoods in many ways. Through appropriate planning, mixed use buildings can be integrated into layouts in order to ensure the re-appropriation of the new layouts by the rehabilitated communities.

This process will not only contribute towards a better quality of life for the people, but will also ensure acceptance of the new place within the community.

MHADA as a planning agency should continue to perform the role it has played in city building. Comprehensive planning of all MHADA land would contribute immensely towards a more dynamic built form as well as help orient the production of quality housing with amenities in the city.

3. Focus towards Urban Design and Architecture

The 'commons' certainly enable a robust and active life in streets of our cities. These spaces in turn become the lifelines of our communities. Worldwide, the most successful city developments have taken into account the importance of mixed use and the relationships of housing with the rest of the city. Large scale new developments in New York such as Battery Park City can become ideal markers of a city's vision that aligns with such ideals of city planning. Famous Canadian-American activist Jane Jacob's concept of 'Eyes on the Street' stresses on the crucial importance of a vibrant street life to neighbourhood safety and community. A vibrant neighbourhood with mixed uses that are continuously accessed by the community ensures a lively community but also higher levels of security by virtue of people's constant vigilance on activities, as seen in the Greenwich Village in New York City.

Keeping these references in mind it is absolutely essential to mandate that Urban Design departments are set up within all planning agencies. These UD departments can focus on the medium and smaller scale responses of new development projects that contribute to the quality of public life such as the design of sidewalks and how the buildings would respond to their surroundings, carefully curating/ approving plans put up by developers to ensure that common amenities are equally distributed in order to enable easy and constant access by all. This will also ensure that through the process of redevelopment, communities are not simply replaced by 'dormitories' that do not provide the base for the hustle and bustle of daily life that we see in older parts of the city. These checks become incredibly important in defining the architecture and quality of spaces of the city – something that Mumbai has failed miserably in doing over the last 5 decades of development.

Finally, architecture itself must become specific to its location and context and certainly cater to the needs and requirements of the communities that are being rehabilitated as well as the new communities that are expected to come in. Basic levels of light and ventilation must be achieved within these new dwellings. In our climatic context, it is imperative to provide windows on either side of rooms in order to facilitate cross ventilation, including the kitchen area considering our culture and cooking lifestyles. Good circulation

of air significantly reduces health hazards such as the spread of lung related diseases like Tuberculosis. In several rehabilitation projects of the city, there are increasing number of cases of these types of diseases coupled with 'congestion trauma' that is severely affecting life in these communities. It is the responsibility of the State to deliver housing that not only meets the numbers demand but also meets highest levels of health and sanitation.

4. **Implement and enforce the MHADA Act across redevelopment projects**

The MHADA Act, first published in the Maharashtra Government Gazette of 1977, which laid the foundations for establishing a government authority for achieving the objectives mentioned therein is in many ways a progressive act with the aim of producing affordable housing in the city. The act achieves this by regulating two key parameters – (i) size of the units and (ii) the cost of the units in the open market. This ensures that homes in MHADA development projects are economical and thereby more accessible to the masses as opposed to those being generated in the market. As per the Act, all new houses in MHADA developments are created on the following ratio – 50% of EWS and LIG (Economically Weaker Sections & Low Income Groups), 30% for MIG (Middle Income Groups) and 20% for HIG (Higher Income Groups). These reservations coupled with the price caps that are enforced, ensure that even HIG houses produced are in the affordable category. The State must adopt this model across all slums and other redevelopment projects in the city. After all, it is a government regulation which has been in force for over 4 decades now and has been working rather successfully. Private developers who are brought in for SRA projects might feel this is a significantly less lucrative prospect for them compared to the profits to be made by selling high end houses, but the current market shows rather explicitly that bigger, more expensive homes are not in demand and the current inventory is unprofitable for all.

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5. **Ensure a participatory and inclusive planning approach**

Planning can be highly alienating for the masses. Policies, plans and drawings often take a lot of time for even professionally trained architects and planners to understand. We need to take the planning process to the communities in easily understandable and comprehensible formats that encourage people to participate and share their views on their future. Employing intense public outreach campaigns are key to building consensus and momentum for projects, and upon completion ensure an easy transition, acceptance and maintenance in the future. Once people feel a sense of ownership towards their place, the

various elements and actors that ensure the development of a community kick into gear in a seamless autopilot sort of mode. The Sangharsh Nagar rehabilitation project, planned by architects PK Das & Associates and led by Nivara Hakk Surakha Samiti – a housing rights NGO is one of the finest examples of a participatory planning process that has resulted in a hugely successful rehabilitation of almost 25,000 families from the outskirts of the Sanjay Gandhi National Park to 80 acres of land in the central suburb of Powai in Mumbai – making it one of the largest rehabilitation projects in Asia.

Preparing for Future Pandemics

Amidst this pandemic, we are in indeed in testing times. The situation has also brought to light and magnified several failures that are direct outcomes of decisions taken by past governments. However, this is also the moment to seize the opportunity and chart a roadmap to develop a far more sustainable and healthy city for the future, with ‘housing for all’ being a key mandate for all governments. Open spaces and amenities as have been referred to several times in this paper as ‘The Commons’ must become the basis for city planning, thereby shifting the focus away from simply ‘producing’ and ‘monetising’ housing. We must strive for higher levels of dignity accorded to individuals living in the city as well as acknowledge the strength of collectives – therein lies the promise of building sustainable communities for the future.

After all, we hope that the next time a pandemic comes knocking on our door we do not find ourselves having the same discussions as we are now, as our predecessors had in the past after the deadly plague of the 1890s.