Planning Times

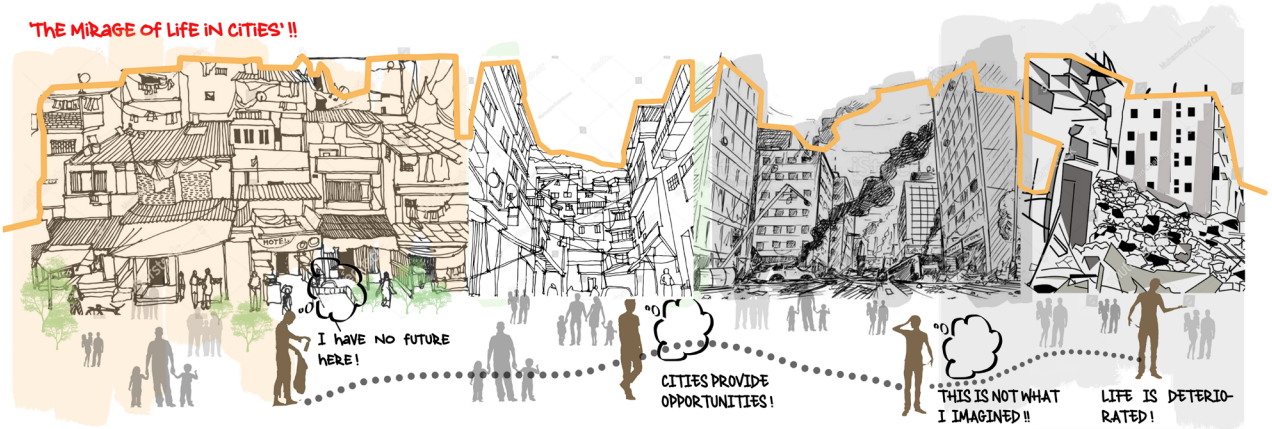
Issue 06 • July 2023

PEOPLE, PLACES AND POLICIES

URBAN FLOODING IN METROPOLITAN CITIES

THAT SINKING FEELING ! : A TALE of India's Ubiquitious Urbanisation

'THE MIRAGE of LIFE in CITIES' !!



PROBLEM : URBAN FLOODING in INDIAN CITIES

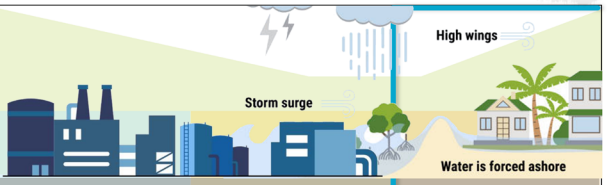
Higher rainfall

Storm surges and frequent depressions in open waters

Depleting groundwater tables

CAUSES : POOR AND INEFFICIENT URBAN PLANNING !!!

Encroachments on drainage areas like lakes, wetlands, and riverbeds close off ways for the excess water to flow thus causing floods.

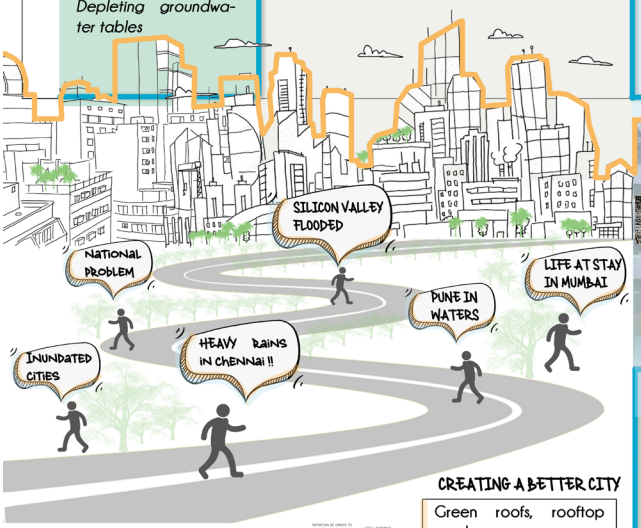


Illegal mining activities in rivers deplete the natural bed causing soil erosion and reducing the water retention capacity of the water body.

Pollution of water bodies is choking up the pathways for excess water to flow.

Many of the water bodies in the country are filled with non-biodegradable waste

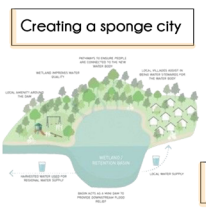
Climate change has disrupted the rainfall pattern; also, urban heat lands have increased rainfall over urban areas resulting in flooding.

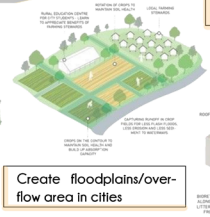


CREATING A BETTER CITY

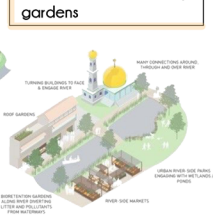
Green roofs, rooftop gardens

Creating a sponge city

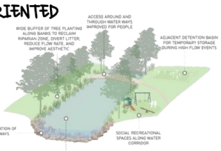




Create floodplains/overflow area in cities



ACTION ORIENTED



INTEGRATED WATER MANAGEMENT

INNOVATIVE AND SCIENTIFIC IDEAS

BETTER PLANNING STRATEGIES

INCLUSIVE LONG TERM APPROACH

IMPACTS !!

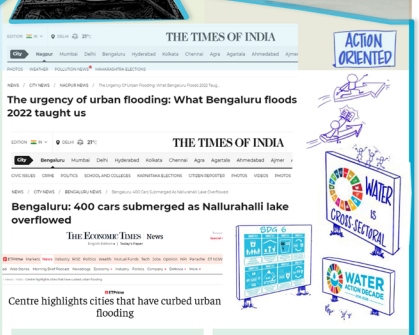
VEGETATION

The environment is further damaged as the vegetation gets washed away during the extreme flow of water.

LAKES

Many of the lakes have been filled up; others have been curtailed through stealthy encroachment and concretisation. Additionally, the interconnectivity between water bodies has been disrupted.

The drainage system of the city has also been compromised



ENCROACHMENTS

The encroachments of river beds not only pose danger but theycause great deal of pollution to the river beds and these

WILDLIFE

Wildlife habitats can be destroyed by floodwater. contaminated floodwater can pollute rivers and habitats. silt and sediment can destroy crops on farms. river banks and natural levées can be eliminated

SUBMITTED BY : AFIA SIDDIQUI , SYED MOHD FARAZ , (SPA DELHI)

POSTER

That Sinking Feeling!

A Tale of India's Ubiquitous Urbanization

The poster is titled **'That Sinking Feeling! : A Tale of India's Ubiquitous Urbanization,"** underlining how Indian cities have made tremendous advancements globally while simultaneously failing to meet the infrastructural needs of their burgeoning population.

A recent report published by Knight Frank India in 2023, meticulously puts the spotlight on Bengaluru's rapid and unplanned development, affecting the interconnection between water bodies such as lakes and stormwater drains. The report highlighted that the city required an additional 658 km of stormwater drains to prevent urban flooding with the effective adoption of nature-based solutions such as 'sponge city'.

Thus, as planners, our focus should lie on action-oriented blue-green solutions deployed at various levels with inclusive long-term approaches that will help create 'sustainable, inclusive, and healthy cities'.

Afia Siddiqui
M.Plan Student
SPA Delhi

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Planning Times

PEOPLE, PLACES AND POLICIES

Issue 06 • July 2023

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My experience with Climate Bullying

I drew the sun for the first time when I was four. The sun had tiny rays of light emanating from its egg-shaped body, peeking over the mountains, with blushy cheeks, cute eyes, and a happy smile!

However, over the years, this image has vanished. Today, I stand before you, constantly bullied by climate change. I feel trapped by the scorching heat and by bitter winds. I sweat with fear as I walk through the blazing streets. I am afraid of rising levels of the sea, temperatures, and my vulnerability to diseases. I am sure that many of us go through this experience. Many have started to experience the adverse effects. Many have succumbed to it.

How can we stand together and fight this emotion? How do we lessen the impacts of climate change? How do we ensure a safe future for our generations to come? Unfortunately, we don't know the true answer to this. But we have small and simple solutions that can gradually address these concerns. We know compact and realistic solutions that can reduce the threat climate change poses to millions of lives. Some of these solutions are in the sixth and latest edition of The Planning Times Magazine!

Join our writers as they discuss how urban planning is a front-line response to climate change, how to adopt 1.5-degree lifestyles, and how green planning can unlock the environmental potential of cities. If you're not in the mood to talk about your climate feelings, we also have articles about innovation, planning perception, and career advice for struggling urban planning graduates.

We hope to motivate you to work towards a better planet earth and help resolve our climate crisis. *We wish to see everyone smiling at the sun, and the sun, smiling back :)*

Here's to the creativity you'll craft from our magazine!

Karthik Girish
Chief Editor
(editor@planningtimes.com)

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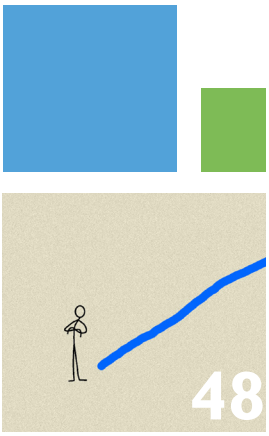



नन्द एण्ड कम्पनी कबीरचौरा वाराणसी
ATLAS
जूली बैण्ड

CLIMATE CHANGE

Planning for Climate Change

Urban planning as a front-line response to climate change

BY TSOMO WANGCHUK

URBAN PLANNING has been recognised as a response to climate change, which took upon the discussions in COP27. The COP26 Glasgow Pact also required countries to incorporate climate change and adaptations into their planning at all levels of government. Urban planning is also included in the recent Sixth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC). This shows that urban planning plays a crucial role in addressing climate change on a global scale. But can urban planning act as a front-line response to climate change in our country?

DURING COP26, India stated their goal is to reach net-zero emissions by 2070 and decrease their emissions intensity by a minimum of 45 percent by 2030. To achieve net-zero commitments, urban actors must also prioritize meeting the targets outlined in Sustainable Development Goal 11: Sustainable Cities and Communities. There have been several studies on how urban planning is key to net-zero. Moreover, updating land-use planning is also necessary to respond to a changing climate. One of the key strategies to tackle climate change in India is through the development of resilient, climate-responsive and sustainable cities.

Numerous urban models and initiatives have emerged in response to climate urgencies and sustainability of cities. The Indian government has launched

several programs to promote environmentally sustainable urban development, such as 'Smart Cities Mission' and 'AMRUT (Atal Mission for Rejuvenation and Urban Transformation) Mission'. These have led to the development of green and blue spaces in many cities to absorb rainfall and improve water quality, while also providing recreational areas for local communities. As cities in general contribute more than 60% of greenhouse gas emissions, the quest for a more contemporary urban policies that focus on decarbonisation especially for Global South, still remains.

Urban planning has a portfolio of climate change strategies that guide decisions on urban form and function. It includes sustainable land use and integration of climate considerations into urban planning using infrastructure strategies, land development, and management tools such as zoning regulations. Some of these strategies are significantly being encouraged in terms of policies and regulations in Indian cities.

THE DEVELOPMENT of climate-smart transport systems contributes significantly to urban planning for resilience. There are various researches which show that vehicles generate significant amounts of air pollution, which can have serious health and environmental impacts. Cities in India are beginning to take action on this issue by implementing measures such as congestion pricing, vehicle restrictions and making a shift to public modes of transport. Encouraging mobility options such as cycling and public transport can reduce greenhouse gas emissions while also improving air quality and reducing traffic congestion.

Apart from the focus on green infrastructure, India has also increased its emphasis on grey infrastructure such as drainage systems, flood barriers, and coastal protection structures. These are critical components of climate resilience, as they help minimize the damage caused by extreme events such as floods and cyclones.

THE INDIAN GOVERNMENT has also invested in weather forecasting and early warning systems, which help communities prepare for extreme weather events. The development of heat action plans has been an effective approach to tackle the increasing heatwaves, which pose a significant threat to public health. A few Urban Local Bodies (ULBs) are working to develop and implement early response mechanisms to deal with the aftermath of extreme weather events. For example, the ULB of Ahmedabad has created a heat action plan that includes early warning systems, public awareness campaigns, medical assistance, and other measures to help individuals cope with heat waves. Additionally, the city of Chennai has developed a flood management plan that includes early warning systems, evacuation plans, relief supplies, and other measures to address the effects of heavy rainfall.

ULBS play a crucial role in shaping the development of urban areas. They are responsible for preparing and implementing urban development plans that guide the physical and economic growth of the city, and for promoting sustainable practices such as waste reduction, energy efficiency, and green space development. However, urban planning in terms of sustainable land use has significant institutional barriers such as low political acceptability and challenges for implementing land use adaptation measures. Effective governance is critical element in building resilient cities in India. Local government institutions, ULBs, and community organizations must work together to identify and address climate risks and develop effective adaptation strategies. Community engagement and participation play a critical role in building climate resilience through the identification of the most vulnerable groups and the development of appropriate adaptation strategies.

"Natural systems such as parks, wetlands, and natural drainage systems can be more cost-effective and sustainable than traditional grey infrastructure, such as concrete stormwater drains and sea walls.

Another climate change strategy is integrating natural systems into urban planning. Natural systems such as parks, wetlands, and natural drainage systems can be more cost-effective and sustainable than traditional grey infrastructure, such as concrete stormwater drains and sea walls. For example, the city of Ahmedabad has implemented a successful urban heat island mitigation plan that relies on the use of green infrastructure to reduce temperatures and improve air quality. Another example is of Delhi

where the government has launched a campaign to plant millions of trees across the city in an effort to combat air pollution and reduce carbon emissions. Natural drainage systems such as wetlands and rain gardens can further help to reduce flooding and improve water quality, while rainwater harvesting and wastewater recycling can reduce the demand on municipal water supplies. Overall, natural systems-based approaches to climate action can provide a range of benefits to cities, including improved air and water quality, reduced greenhouse gas emissions, enhanced community resilience, and increased biodiversity.

BUILDING RESILIENT CITIES in India requires a multi-faceted approach that integrates natural systems into urban planning, adopts comprehensive climate action plans, promotes effective water management, and engages communities in the decision-making process. As India continues to urbanize rapidly, it is crucial to incorporate climate resilience into urban planning strategies. There is currently a dearth of proper land use regulations based on land suitability and local conditions, and absence of coordination among different actors involved in urban planning. Urban planning must incorporate long-term climate change strategies across physical scales and jurisdictions. Transportation planning and management must also integrate climate risk reduction in areas of spatial planning and land use regulations.

The role of urban governance in adapting to climate change impacts is also critical with the responsibility of local urban bodies to build capacity and empower communities for effective climate adaptation, implement technologies and infrastructure for adaptive capacity, and promote awareness and outreach to reduce climate-related risks and hazards.

PRIORITIZING actions that reduce greenhouse gas emissions and increase resilience to climate risks at various urban levels is essential, which can be addressed through proper planning and policy interventions. Therefore, urban planning can be in the front-line to climate change response. However, this must be integrated with strong governance, community action, and innovative adaptation strategies which are critical to building more climate-resilient cities. It is pertinent to understand the context for planning cities that address both current and future climate risks. Further, policies should be designed such that it is flexible and responsive to changes along with new information. Lastly, action must be taken now so as to minimize negative impacts in the future.

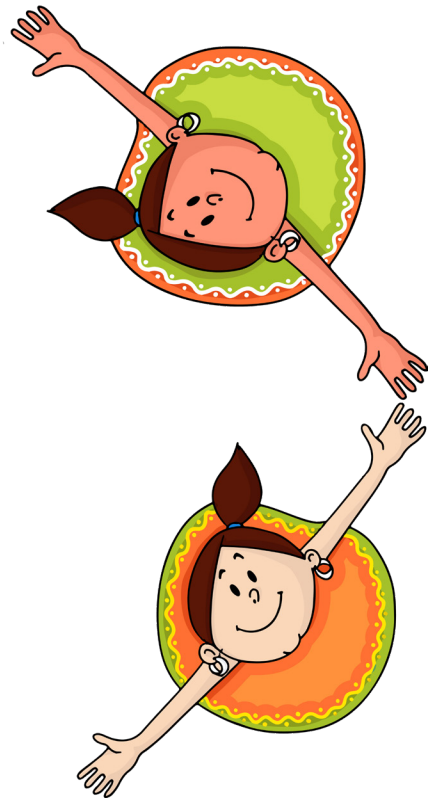
> “
>
> **Urban planning must incorporate long-term climate change strategies across physical scales and jurisdictions.**

PART 3

CFCs for Children

This is a three-part series covering the concept and need for child friendly cities (CFCs). In part three, the author discusses existing and proposed policies at national and international levels to implement child-friendly cities.

BY AAKRITI



UNITED NATIONS CONVENTION ON THE RIGHTS OF THE CHILD (UNCRC)

The first UN document specially focused on child rights was- "Declaration on the Rights of the Child". It was a moral guide of conduct for governments. In 1989, the global community adopted the United Nations Convention on the Rights of the Child. It consists of 54 articles covering all four major child rights: Right to life, Right to development, Right to protection, and Right to participation. It came into force on the 2nd September 1990.

FRIENDLY CITIES INITIATIVE

UNICEF aims "to establish child rights as enduring ethical principles and international standards of behavior towards children". CFCI is a means by which National Committees can promote and implement child rights reaching even at the local level. The Child Friendly Cities Initiative emerged in recognition of several important trends- "The rapid transformation and urbanization of global societies; the growing responsibilities of municipalities and communities for their populations in the context of decentralization; and consequently, the increasing importance of cities and towns within national political and economic systems."

SUSTAINABLE DEVELOPMENT GOALS

In September of 2015, world leaders set a transformational path for the future of human development. They adopted the Sustainable Development Goals (SDGs). Millions of people are involved in shaping this global agenda like government, civil society, the private sector, concerned individuals (including children and youth). These stakeholders and others are now actively involved in executing this agenda from the even at local level and also at global levels so that all people (including all children) will live in a safer, cleaner and more prosperous world.

SCENARIO IN INDIA – POLICIES AND FRAMEWORK

CONSTITUTION OF INDIA

The constitution of India embraces a majority of the rights included in the UNCRC under the Fundamental Rights. It guarantees that a child has the following set of rights. These include:

- Right to free and compulsory elementary education for all children in 6–14 year age group (Article 21 A)
- Right to be protected from any hazardous employment till the age of 14 years (Article 24)
- Right to be protected from being abused and forced by economic necessity to enter occupations unsuited to their age or strength (Article 39(e))
- Right to equal opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity, and guaranteed protection of childhood and youth against exploitation and against moral and material abandonment (Article 39 (f))
- Right to early childhood care and education to all children until they complete the age of six years (Article 45)

LEGISLATION AND RULES

The key legislations and legal provisions that focus on children's rights include 48 special and local laws and above 60 provisions dealing with various crimes, punishments and procedures as contained in the "Indian Penal Code, the Criminal Procedure Code and the Indian Evidence Act." There is also much state specific legislation as well as judicial precedence set through case law.

POLICY FRAMEWORK

National Policy for Children, 1974 is the first policy document identifying and promoting the needs and rights of children in India.

The constitution of India embraces a majority of the rights included in the UNCRC under the Fundamental Rights.

National Plan of Action for Children (NPA) was released in August 1992 following which India agreed to the UN Convention on the Rights of the Child.

National Charter for Children, 2003 reiterates the commitment to the cause of children with the aim of overseeing that no child remains hungry, illiterate or sick.

National Policy on Education, 1986 provides elementary education to colleges in both rural and urban India.

THOUGH there is enough of legislative and policy framework for securing child rights and fostering development of children, there hasn't been significant improvement in the living condition of children in urban areas. This is mainly due to the fact that the existing policies and legislative framework primarily focus on child rights and social aspects of children's development like health and education but have not given much significance to the living conditions and urban environments in which the children live.

Moreover, it happens many-a-times that even though policies and provisions address the issues of children, they fail to involve children in formulating them, owing to the paternalistic approach.

APART from saying participation for the name sake, participation that is needed is "Authentic" According to Hart; there are five forms providing authentic participation. The first involves children voluntarily taking the tasks assigned by adults. Here adults (guardians and policy makers) explain how to accomplish the errands and why children should take part. Considering the second type of participation, here children are formally consulted. But they are not involved in the final decision making process or in implementation of any proposed change. But most importantly, children are pre-informed regarding the intentions to use their inputs.

The third form of participation corresponds to missions that are initiated by adults (mainly policy makers) but then completed through joint decision with children. It makes sure that perspectives of children are taken into consideration. The fourth form of participation involves processes that are begun and led by children. Here, adults play a secondary support. This enables children to shape their own environment. Lastly, the fifth form is somewhat opposite to the third form. It refers to projects that are begun by young people but then ultimately developed through joint decision making with policy makers.

Hart mentions, "Along with the third model, this type of participation can be characterized as proactive and visionary as it allows for children and adults to interact and benefit from their respective strengths to build more user-friendly communities." These five forms involve the free, informed, and meaningful participation of children. These forms correspond to different contexts and various situations. These are quite simplistic in nature, but in reality the planning process are highly complex. Many-a-times, a single planning process might include the characteristics of various participatory means. (Torres, 2009)

If only adults were as optimistic as children: "The children's view of the city is optimistic and full of life, open to the future while firmly rooted in the present. A sense of the future that boldly demands to be listened to and dialogued with. A tenacious feeling of optimism that claims the right to be part of the dialogue in giving shape and identity to the city." (Davoli and Fari 2000)

CITIZENS are the citizens of tomorrow. They are the future of our nation. And like if the vision of an efficient city can be a necessary condition for making smart cities, then it is imperative to state that child-friendly planning and governance should also be a condition for making smart cities.

"The children's view of the city is optimistic and full of life, open to the future while firmly rooted in the present. A sense of the future that boldly demands to be listened to and dialogued with. A tenacious feeling of optimism that claims the right to be part of the dialogue in giving shape and identity to the city.

1.5° LIFESTYLE

BY NANCY GROVER

The 1.5-degree lifestyles programme is designed to identify and analyse the impact of consumption habits and lifestyle choices on climate change.

CLIMATE CHANGE is one of the defining issues of our time, and its effects are being felt all over the world. With rising temperatures, melting glaciers, and an increase in extreme weather events, it is evident that climate change is an urgent problem that needs to be tackled. The severity of the impacts of climate change on the environment, society, and the economy is alarming. It is a threat to ecosystems, water supplies, food security, human health, and stability.

The current state of the climate crisis is worrying. The concentration of greenhouse gases, such as carbon dioxide and methane, in the atmosphere has risen to unprecedented levels in the last 800,000 years. Human activity, particularly the burning of fossil fuels, has been identified as the primary cause of this increase. According to the Intergovernmental Panel on Climate Change (IPCC), the global mean temperature has already increased by 1.1 degrees Celsius above pre-industrial levels. We are already seeing the consequences of this change in the form of more frequent and intense heatwaves, droughts, floods, and wildfires.

The urgency of tackling climate change is clear, and adopting low-carbon lifestyles is an effective way to mitigate its effects. It is essential to reduce the amount of carbon emissions in the atmosphere to limit global warming to 1.5 degrees Celsius and avoid the worst impacts of climate change. Statistics reveal that global carbon dioxide emissions continue to rise, with 2019 seeing a record high of 36.8 gigatons of CO_2. It is vital to understand that each individual's carbon footprint contributes to this growing number, and adopting low-carbon lifestyles can make a significant difference in reducing emissions. Adopting low-carbon lifestyles involves making changes in our consumption patterns, business models, and production-side efficiency improvement.

THE 1.5-DEGREE lifestyles programme is designed to identify and analyse the impact of consumption habits and lifestyle choices on climate change. With the adoption of the Paris Agreement, international stakeholders have embraced an aspirational goal of keeping global temperature rise at 1.5 degrees Celsius above pre-industrial levels. In order to meet this target, policy approaches must utilise a wide range of solutions, including those derived from changes in personal consumption habits.

Most policy approaches for meeting climate targets rely on the hope for new technologies – such as negative emissions technologies – and changes in production.

This often underestimates the contributions of lifestyle changes. The 1.5-degree lifestyles work fills a gap in the existing research by establishing global targets for lifestyle carbon footprints, examining current consumption patterns and their impacts on footprints, and evaluating potential reduction impacts of low-carbon lifestyle options.

The 1.5-degree lifestyles work looks into identifying reasonable carbon footprint targets for individuals, while also escalating awareness about current patterns of consumption that are impacting our shared environment in negative ways. Through this effort, it aims to quantify how different types of low-carbon lifestyles can have substantial emissions reductions and therefore help reach our climate goals more effectively and efficiently. By rallying people around quantifiable evidence-based initiatives, instead of sweeping hope for technological miracles, we can look towards real behavioural and habitual change that incentivize collective action today not tomorrow.

The 1.5-degree lifestyle emphasizes the need for individual actions and behavioural changes, recognizing that collective efforts are crucial to address climate change effectively. It complements broader systemic changes, policy interventions, and international cooperation to achieve the necessary emissions reductions and limit global warming to 1.5 degrees Celsius.

The 1.5-degree lifestyles approach examines GHG emissions and reduction potentials using consumption-based accounting, instead of production-based accounting, which covers only direct emissions from domestic production activities within certain geographical boundaries. Consumption-based accounting covers both direct emissions in a country and embodied emissions of imported goods while excluding emissions embodied in exported goods. This accounts especially for the global impacts of high-consuming societies, and recognises that some communities still need to increase consumption to meet basic needs of their citizens.

IN 2019, a seminal report published by Institute for Global Environmental Strategies (IGES) suggested that our carbon footprints must be reduced to 2.5 metric tons CO2 equivalent (tCO2e) by 2030, 1.4 tCO2e by 2040 and 0.7tCO2e by 2050 in order to stay within the 1.5° Celsius target goal.

Thus, the lifestyle changes towards achieving a sustainable society are what are known as "1.5°C Lifestyles" which focus on reducing carbon footprints across six domains – housing, food, mobility, leisure, consumer goods and services. These six domains account for over 75% of individuals' carbon emissions and hence their footprint, and are key to achieving a transition to a sustainable and more fulfilling society. Through making conscious decisions about limiting consumption of resources and energy use within these domains we can play an important role in transitioning society towards a greener future where ecosystems can recover and flourish.

LIFESTYLE CHANGE options are multiple and include measures like reducing meat consumption, investing in energy efficient appliances, using public transportation services, utilizing green energy sources and more. A shift to low-carbon lifestyles has the potential to substantially reduce emissions while at the same

time improving quality of life and health outcomes. It is essential that governments recognize these measures as part of their climate policy and provide incentives for citizens to adopt low-carbon lifestyles.

IN MODERN SOCIETY, there are several common consumption patterns that increase our lifestyle carbon footprints and contribute to climate change. One of the primary contributors to carbon emissions is our food consumption, particularly the consumption of meat and dairy products. The livestock industry is responsible for significant amounts of methane and other greenhouse gas emissions. Agriculture and transportation are also responsible for significant carbon emissions, especially when it comes to the production and distribution of food.

Another common consumption pattern that increases our carbon footprint is air travel. Airplanes emit high levels of carbon dioxide and other greenhouse gases, and the increasing frequency of air travel globally has contributed to the rise in carbon emissions. Additionally, our transportation choices, including individual car usage, contribute to carbon emissions.

We can measure the carbon impact of our consumption patterns through consumption-based accounting. This system allows us to track the total carbon emissions of goods and services consumed by an individual, household, or community, including the carbon emissions associated with the production and distribution of those goods and services.

TO MITIGATE the impact of our carbon footprint, we need to adopt a low-carbon lifestyle and make sustainable choices in our consumption patterns. We can opt for a vegetarian diet or reduce meat consumption, use public transportation or switch to electric vehicles, and reduce air travel by making alternative travel choices. Furthermore, businesses can implement sustainable production and distribution systems to reduce carbon footprint and encourage a shift towards low carbon lifestyles.

IN CONCLUSION, common consumption patterns in society today contribute significantly to our lifestyle carbon footprint and have a considerable impact on our environment and climate change. Understanding our impact is the first step in adopting a low-carbon lifestyle that is sustainable for our future.

Business models play a vital role in promoting low carbon emissions and achieving a sustainable lifestyle. The way businesses operate and consume resources can significantly impact the environment and contribute to climate change. Therefore, it is crucial to adopt business models that minimize carbon emissions and promote sustainable practices.

One example of a business model that promotes low carbon emissions is the circular economy model. This model focuses on minimizing waste and maximizing resource efficiency in production processes. By adopting circular economy principles, businesses can minimize their environmental impact and reduce their carbon footprint. Some companies have already started implementing this model by reusing materials, reducing waste, and designing products for longevity.

GREEN FINANCE is another business model that supports sustainable practices. By investing in environmentally friendly technologies and projects, businesses

> **Common consumption patterns in society today contribute significantly to our lifestyle carbon footprint . Understanding our impact is the first step in adopting a low-carbon lifestyle that is sustainable for our future.**

can promote a low carbon emissions economy. Through green bonds and sustainability-linked loans, companies can finance projects that prioritize energy efficiency, clean energy, and sustainable infrastructure. The finance sector has a significant role to play in reducing carbon emissions, and green finance can be a powerful tool to drive change.

SUSTAINABLE transportation and mobility solutions are also great examples of business models that can help reduce carbon emissions. Electric vehicles, shared bikes, and e-scooters are examples of sustainable transportation that are becoming increasingly popular. By promoting these solutions, companies can reduce carbon emissions from transportation and help achieve a low-carbon economy.

ANOTHER approach businesses can adopt is energy-efficient buildings. By designing and constructing energy-efficient buildings, companies can reduce carbon emissions from heating, cooling, and electricity consumption. Green data centres and sustainable agriculture practices are other examples of business models that promote low carbon emissions.

In conclusion, there are several business models that promote low carbon emissions and contribute to achieving a sustainable lifestyle. By adopting circular economy principles, investing in green finance, promoting sustainable transportation, and adopting energy-efficient building practices, businesses can reduce their carbon footprint and play a vital role in mitigating climate change.

EMISSIONS

COOLING AS A SERVICE FOR OUR CITIES

BY ISHITA SARASWAT, PARTH MAKWANA, AND ANUKRITI PATHAK

IN THE SCORCHING heat of Indian summer, as I walked through the city's bustling streets, I could not help but feel the intense discomfort caused by rising temperatures. Over the past decade, India has experienced a concerning surge in the frequency and intensity of heat waves, resulting in the loss of over 6,000 lives. However, urban areas bear the brunt of these heat waves, exacerbated by the concentration of human activities within a smaller space. As temperatures soar, the demand for cooling increases, and with it comes a host of negative consequences, including public health issues, reduced workforce productivity, and deteriorating air quality, disproportionately affecting the urban poor residing in slums or slum-like conditions.

TO ADDRESS the escalating cooling demand, cities like Delhi and Mumbai are allocating a significant portion of their electricity, more than half, to power air conditioners during the hot season. The sale of room air conditioners increased substantially from 2.75 million to 4.73 million units between 2008 and 2017. However, despite this growth, the penetration rate remains relatively low at around 7-9%. To understand this disparity, we must delve into India's economic growth characteristics. While the country boasts of being one of the fastest growing and largest economies globally, wealth distribution remains starkly unequal, with the top 1% of earners capturing 22% of the total income (Picketty, 2018).

INDIA'S low penetration rate of room air conditioners highlights the pressing need to bridge the cooling divide and ensure equitable access to cooling technologies. The urban poor, comprising a significant portion of the population engaged in informal activities, face significant challenges in meeting their cooling needs. As per the India Cooling Action Plan 2019, only around 8% of households currently have room air conditioners, with projections of 21% and 40% by 2027-28 and 2037-38, respectively. However, it is crucial to recognize that a substantial proportion of the population, particularly those in low-income segments, may not have access to active air conditioning.

ADDRESSING cooling demands for net-zero emissions is not just an environmental imperative but also a social and economic necessity. As India's per capita income is projected to rise, and with it, the quality of life for its citizens will significantly surge in cooling demand. Without additional policy interventions and a departure from business as usual, room air conditioner penetration is expected to increase rapidly, resulting in a substantial energy consumption of approximately 152 TWh per year by 2030. Such high energy consumption exacerbates greenhouse gas emissions and contributes to the country's climate change concerns.

To create a sustainable and equitable cooling system, cities must take the lead in adopting innovative solutions that minimize energy consumption and reduce environmental impact. Designing buildings with green roofs, efficient insulation, and advanced cooling systems can significantly decrease energy requirements. Promoting natural ventilation, passive cooling techniques and energy-efficient appliances are crucial steps toward achieving a sustainable and equitable cooling system.

INDIAN CITIES embody the complex dynamics of both developed and developing worlds, as reflected in their mounting inequalities. On one side, there is a population with abundant resources and adequate access to cooling, while on the other, we find the informal workers who form the majority of the urban poor.

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Astonishingly, approximately 66.7% of the working population in Delhi and 68% in Mumbai are engaged in informal activities (ILO, 2019). These urban inequalities manifest in low per capita energy consumption levels for space cooling. India consumes a mere 69 kWh per capita for space cooling, significantly lower than the global average of 272 kWh, positioning it among the world's lowest consumers (ICAP, 2019).

LOOKING AHEAD, pragmatic macroeconomic estimates project a rise in India's per capita income to approximately $5,700 by 2030 (Bloomberg, 2019). This anticipated growth is expected to transform the quality of life in Indian cities, uplifting the socio-economic status of its citizens. However, this positive development, coupled with rising temperatures in urban areas, will inevitably alter consumption patterns and generate a surge in cooling demand. Without additional policy interventions and a departure from business as usual, the penetration of room air conditioners is projected to skyrocket in India, potentially reaching between 190

and 239 million units by 2030 (ICAP, 2019). Such a scenario would result in an alarming annual energy consumption of around 152 TWh.

THE INDIA COOLING ACTION PLAN 2019 reveals a staggering projection: the nationwide cooling demand, measured in Tonnage of Refrigeration (TR), is expected to grow approximately 8 times by 2037-38, compared to the 2017-18 baseline. Within this sector, room air conditioners take center stage, constituting the dominant share of cooling energy consumption, accounting for about 40% in 2017-18 and projected to reach around 50% by 2037-38. AEEE. (2021). With rising temperatures, particularly during the scorching summer months, the strain on energy resources intensifies, and the need for cooling in urban areas becomes increasingly pressing. Additionally, the surge in energy consumption contributes to higher greenhouse gas emissions, exacerbating the country's concerns about climate change. This opinion piece aims to shed light on cities' pivotal role in addressing cooling needs and advocates for sustainable solutions that align with the larger net-zero emissions framework.

ACCORDING to the projections of the India Cooling Action Plan 2019, the current penetration of room air conditioners in households stands at approximately 8%. This figure was expected to rise to 21% by 2027-28 and 40% by 2037-38. However, it is important to note that a significant proportion of the population, particularly those in the low-income and economically weaker segments, will not have access to active air-conditioning. Ensuring equitable access to sustainable cooling solutions becomes paramount in bridging this gap.

INTEGRATING passive techniques and nature-based solutions into urban planning and infrastructure development is crucial for India's sustainable path. Passive cooling techniques offer an energy-efficient approach to address escalating cooling demands. Natural ventilation, building orientation, and the integration of green infrastructure are examples of passive techniques that reduce energy consumption and enhance comfort. Achieving this requires collaboration among architects, urban planners, policymakers, and communities to prioritize sustainable design principles and create environments harmonizing with nature. Numerous cities worldwide have successfully implemented passive cooling strategies, such as Singapore's iconic Gardens by the Bay and Melbourne's innovative passive cooling towers. By adopting and adapting these strategies, cities in India can pave the way for a sustainable and cooler future.

INDIA has taken necessary steps to combat urban heat islands and reduce cooling-related energy consumption. Initiatives like the 'Cool Roofs' program in cities like Ahmedabad and Delhi have showcased the country's commitment to addressing these challenges. Furthermore, the government's focus on renewable energy and energy-efficient policies, as demonstrated by the National Cooling Action Plan, highlights India's dedication to net-zero cooling.

With a growing focus on renewable energy sources, India has the potential to leverage solar power for sustainable cooling solutions. The country's rich tradition of passive cooling techniques, such as courtyards and natural ventilation, can be revived and combined with modern designs to create energy-efficient and comfortable urban spaces. Integrating solar cooling technologies, such as solar air conditioning and solar-powered refrigeration, can significantly reduce energy consumption and greenhouse gas emissions.

IN THE MEDIUM TERM, recommendations include promoting the use of alternative technologies such as trigeneration systems, district cooling, and thermal energy storage, revising and strengthening compliance levels of the Energy Conservation Building Code (ECBC), making building management systems mandatory in new constructions, implementing retrofit programs for existing buildings, and fostering national and international collaboration for cooling-related research.

Furthermore, increased funding should be allocated to research emerging technologies that have the potential to significantly reduce emissions from cooling in the long term. By implementing these recommendations, we can take a proactive approach towards sustainable and energy-efficient cooling solutions, ensuring a greener and more resilient future.

IN CONCLUSION, addressing cooling demands for net-zero emissions is crucial. We must reduce reliance on conventional cooling methods, prioritize sustainable design and urban planning, and ensure equitable access to cooling solutions.

Integrating passive techniques, green infrastructure, and solar cooling technologies can create cooler and healthier cities while minimizing energy consumption and greenhouse gas emissions. Collaboration among stakeholders, research, and funding is essential for a sustainable and energy-efficient future. Let's work together to build resilient and inclusive cities that align with the net-zero emissions goal.

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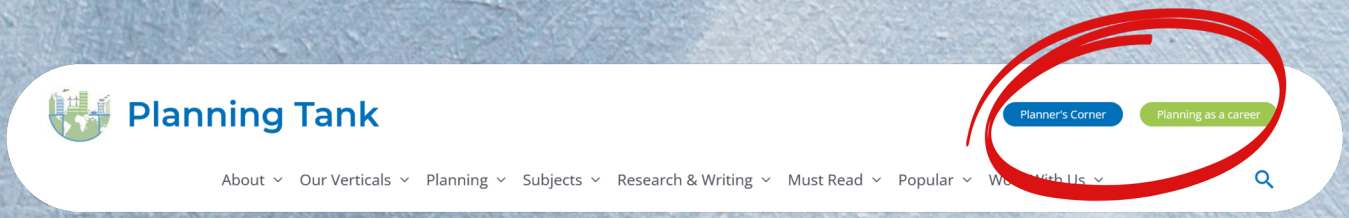

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Course Review

BY PLANNING TIMES TEAM

The Planning Times team sits with the first batch of the Integrated B.Planning M. Planning Programme at SPA Delhi. They share with us their first year experiences and reactions to the course.

> **“ I have learned a lot of new things which we never explored before in our bachelors. So, I feel really good.**

How do you guys feel about opting for the Integrated B. Plan M. Plan Programme?

Tanuj: We actually realize that it was a good decision. We had some risks which are yet not answered, but still, we have some good answers also.

Ameg: Yeah for me, with what we have done till now, our studios and the theories, I have learned a lot of new things which we never explored before in our bachelors. So, I feel really good. Specially mentioning about the case of finance classes, I was really bad at financing part because we were never taught much about it. But now we learnt a new skill and with our efforts it is visible on our work too.

Adil: I also did feel good about joining the integrated programme because the approach is very different. As we are a group of six students, we have more one to one interaction with the faculty. Thus,

The first Integrated B. Planning M. Planning Programme batch.
(From left to right): Calvin Itty Vinod, Ameg V, Abhilasha Kalra, Adil Anwar, Karunakar Hansdah, Tanuj George

we are getting more mentoring from them. So, it's actually better than the bachelors semesters for me.

Abhilasha: What I would say if you ask me about what is happening today is that, I see my friends are struggling after their bachelors, with whatever job opportunities they are looking for. Either they are asked for one to two years of experience or for a masters degree. Even though they have completed a four year course, they are still struggling. But when I see myself standing somewhere one year down the line, I satisfy either of the criteria, considering my one year of masters being treated as one year of experience or it can be treated as something which is equivalent to a Masters. That dilemma of applying for a job gets sorted with just this course. When I see that, I think that it's a positive response.

What is the exact degree certificate that you get?

Calvin: On the certificate we are going to get the degree "Integrated B. Planning M. Planning Programme". It wouldn't be Bachelors in Planning or Masters in Planning. And we will also not get any specialization like Masters in Transport Planning or Masters in Environment Planning.

How would you differentiate yourself from a B. Plan + M. Plan graduate?

Tanuj: I would say that we stand a bit ahead because we earned a lot of practical skills coming into the semester in the last three months, doing environmental analysis, financing, or phasing of projects in a masterplan. All these things were there in our bachelors course but we didn't actually do any of it. These advantages might be also because we are a small group of six and we got individual exposure into these factors. If we rule out that possibility it could be a benefit which can be gained only by coming into this course. So, I think that is where we

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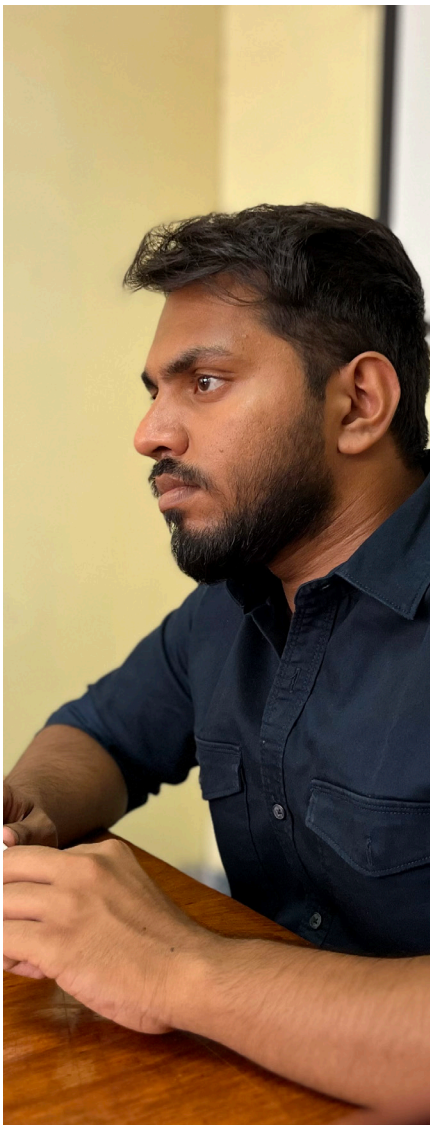
For this Integrated B. Planning M. Planning, we have got well experienced faculties for our studio and theory subjects and all. And for theory subjects, the faculties which we got are from the field itself.



stand out. We actually have a better idea on what we would go and do on a field. I would say that I learned more in last six months than what I learnt in my three and a half years of bachelors.

Could you give us an example?

Tanuj: So we made a master plan in our third year. What we used to do is, we projected a population and then we started planning for it. But now we actually start questioning ourselves whether the city is actually capable of more development if the trend continues. For the first time we started thinking about a carrying capacity which should be defined first and then about developing. There were a lot more problems which we brainstormed and brought in concepts to solve all these. This was never done during our bachelors. Back then all of it was just like a formula. We just followed it step by step. Whereas here we started thinking about it, and started putting our brains into it. This is something new which we did differently from what we did in the past three years.

Do you guys think that this difference is because of the course, or the number of students, or the faculty? What is the real difference between B. Plan and Integrated B. Plan M. Plan?

Abhilasha: I would say it is the course that is happening as well as the faculty because when we were in the third year, we were very limited to one particular aspect. If I was doing social infrastructure, that is only something which I'll learn, but in the rest of the sectors I'll have no clue. It was because a bigger class was in consideration and also the faculty interacted with the particular set of people for that particular sector. But here what we did was every sector was an open discussion that is something that our faculty brought in. For every sector I knew about, what might happen, what cannot happen and I was also equally accountable for what is going to happen for any particular sector in general. And you were asking a previous question about what is the difference between “4 + 2” and “5” years. I had another mindset to it. When I do a masters with a specialization, the idea is ultimately to get a job profile and go ahead in life. In job profile eligibility they specify certain specializations.For example if I'm a transport planner, I cannot apply for environment or urban planning. But right now, I don't have a specialization. For five years I'm taught all the sectors. This is something that I can bring into the plate that I am not specialized into one thing, but I know a lot about all of them, so I would say I have an upper hand. Even if I want to apply in transport, I can do that, if I want to apply in environment, I can do that because I don't have a fixed specialization. So that is also something which makes me different from the usual 4 + 2.

Is the approach different too?

Calvin: In B. Plan the understanding within each sector was way less, as one person was responsible for one particular sector only. One person would be working on a particular aspect, whereas when you come to Integrated, you are supposed to understand all of them, getting you an overall understanding. There might be a lack of coordination between the team members in B. Plan, but here since the person is working on multiple aspects, they have better understanding and faculty comments. Even though, it was a lot of work, and we had to spend a lot more time than the previous semesters, it was a better learning experience. In our previous master plans, we were working as different

groups and the coordination for larger groups is very difficult.

Adil: This also depends on the teaching approach, this time we had more discussions with the faculty we had more one-on-one discussions. We had 6-hour straight discussions on *resilience*, which didn't happen earlier because we were too busy working on our own individual sectors.

Ameg: And also, for analyses, we worked on one sector, and for proposals we switched our sectors which helped us check on other sectors. We have never done this in our bachelors. So, we are learning everything new.

How does one student get into the programme?

Abhilasha: Students have to complete 3 years of B. Plan after which they will get a choice in their 7th semester for the integrated programme. On the basis of their merit until the 6th semester, the first 15 students will get an option to opt for the integrated programme. They will have to apply and these applicants will get interviewed and on the basis of the interview they will get selected. The minimum criteria for the application is that their CGPA should be at least 5.5 and they shouldn't have any carry over in the previous two semesters.

Why did you opt for the programme?

Abhilasha: When everyone kept asking me about the use of this course for me, I replied that I don't think I am losing out because I will still have my 4 years of experience from my bachelors and I will still stand equivalent, or even better than a bachelors student.

Secondly, most of the job applications require either a master's degree or equivalent degree. Our integrated course shall fall in the equivalent degree criteria, so I have nothing to worry about. As per the confirmations made to us by the faculty and the approving authorities, this degree is valid for me to apply for a job.

There was a lot of peer pressure for me to take the opposite decision. When I asked my peers why they felt that way, they said that it was just a feeling, and nobody knew about it (the course). Nobody knows it because something like this has not happened before, there is always a first time for things. One of our faculties told us that this is like a life choice. Someone who is ready to take the risk they will, while the ones who want to live a monotonous life they won't. Are you a risk taker, or are you someone who moves in herds?

Adil: For me, choosing planning was also a risk, so I just continued with the attitude, "If i had taken a risk previously why not now?" Also, I had a gap year after my 12th grade, so I thought opting for the integrated programme and completing my masters degree in 5 years will fill that gap.

Calvin: In many foreign countries, they look mostly at your skills, and what you can actually

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accomplish. They give more priority to that than your qualifications. So, on my resume I can have the same skills as that of a two years Master's degree. I'm also not worried about its acceptance, at least in India, because even IITs have integrated courses and it is well accepted. And if you want to apply for other Masters or MBA or things like that, it wouldn't be a hurdle.

How do you feel about the faculty in Integrated B. Planning M. Planning?

Ameg: Yeah, actually, for this Integrated B. Planning M. Planning, we have got well experienced faculties for our studio and theory subjects and all. And for theory subjects, the faculties which we got are from the field itself. For example, for in Finance classes, the faculty is from core financial background. And for the Climate Change, both the professors are fully from the core environmental background. So actually, we are getting to discuss with people from the field.

Tanuj: Some faculty from our B. Plan course are also here, especially the ones from fourth year. But then there is a difference when they come here, because we are the first batch and they want to actually push this course a bit more. And they are trying to to squeeze out what all we can do into this part. So that is actually a plus point for us also. We are pushed to our extent. We are actually doing more stuff.

Abhilasha: Yes, PUSH US BEYOND OUR LIMIT! Whether we bring in something for example, if I had done it in four months there (in B. Plan), I did that in three weeks here (Integrated course) and then our faculty are like *"Okay, what else? This is nothing. You can do more. You can bring more. Come on, do it!"* So, we are being pushed more. I think that is something which in masters also, they do that. They treat you as professionals.

> **"In many foreign countries, they look mostly at your skills, and what you can actually accomplish. They give more priority to that than your qualifications. So, on my resume I can have the same skills as that of a two years Master's degree student.**

One big difference is we are treated as students in B. Plan but here in Integrated, we are treated as professionals. So that is also a shift here from the bachelors.

Tanuj: Even in bringing new faculties, they're trying to bring faculty who are actually working on the field. So exactly like how he said for finance, he's actually a corporate finance professional. And then a lawyer came for the legislature.

There is a negative part also on this side. Because they aren't teachers, the classes would not be actually as interesting as how a teacher comes and teaches. They are actually giving their experiences to us. So, it's our duty to extract whatever we can from them. So, I

wouldn't say that's a negative point, but it's an effort which we have to put from our side.

What do you expect from this course?

Abhilasha: So right now, what I am thinking is that in the next two months I am going to use it to finalize the specialization I want to work in, but I will directly go for a PhD after this. I want to complete my education in one go and then start off with anything related to jobs.

Earlier I was thinking about getting another master degree, but there is no point in doing another masters when I already have one.

Since we are the first batch of this integrated course, a lot of responsibilities come on our shoulders as we are supposed to tell the world about this since there is nobody or any other college who did this before us. So there comes a lot of responsibilities to publicize it and showcase the skills we are bringing forward. People should say that this is the cream of the B.Plan and possesses the top notch skills. This responsibility should be carried forward at least in the next 4-5 years so that people would know about it. This is something that can lead to the success of the course.

So finally what would you tell your juniors? Should they pursue the integrated course or not?

Ameg: If you want to learn more, join the course! Right now, we are being treated as professionals, and if they also want to experience that, then you have to be here.

Tanuj: I agree with what Ameg said, but only if the strength is maintained. The integrated course is supposed to have 15, but I feel the maximum strength should be limited to 10. Only then the advantages that we are getting right now can be continued. But when the number is increased the advantages will be lost. If that strength is maintained I would definitely say go for it. You learn a lot of stuff. Again the top people come here and you will learn. You have the best team here.

Calvin: I wouldn't give them specific advice. At this point I can't tell them to join. Maybe after I graduate, after a year or two I'll come back and tell them how it has helped me.

Abhilasha: Even the faculties said that if somebody is into core transport, they would not recommend this course because you wouldn't get the essence of transport here. But if you're somebody who's into urban and regional planning, the course is right for them. It is a course for those who still want time to explore a lot more in the field, and what it has to offer.

PART 5

POST GRADUATE EDUCATION

PLANNING OVERSEAS

Your guide to Masters programmes outside India

BY GAIBUL SINGH BHULLAR

Planning Overseas is focused on generating awareness of Masters courses offered by countries outside India for urban planning and allied fields. The information that you see here has been collected from official university websites, and the calculations are based on approximations and rounding-off of values sourced from the respective college/university websites. We hope this brings clarity to your choice of opting for planning and allied courses outside India.

UNIVERSITY OF CAMBRIDGE

University of Cambridge

Location: Cambridge, England
Course: M.Phil in Planning, Growth and Regeneration
Duration: 1 year
Total expense*: ₹ 40 lakhs

The MPhil in Planning, Growth and Regeneration (PGR) is the flagship programme of the University of Cambridge aiming to address issues of urban and regional planning and development.

**Tuition and application fees + Average living expense + Average travel cost*

MANCHESTER SCHOOL OF ARCHITECTURE

Manchester School of Architecture

Location: Manchester, England
Course: MA Architecture and Urbanism
Duration: 1 year
Total expense*: ₹ 30 lakhs

MA Architecture and Urbanism allows you to study, and conduct in-depth research into the influence of global cultural and economic forces on contemporary cities.

KTH VETENSKAP OCH KONST

KTH Royal Institute of Technology

Location: Stockholm, Sweden
Course: MSc Sustainable Urban Planning and Design
Duration: 2 years
Total expense*: ₹ 60 lakhs

The master's programme in Sustainable Urban Planning and Design focuses on the correlation between the built environment and social, economic and institutional forces.

THE UNIVERSITY OF MELBOURNE

University of Melbourne

Location: Melbourne, Australia
Course: Master of Urban Planning
Duration: 2 years
Total expense*: ₹ 60 lakhs

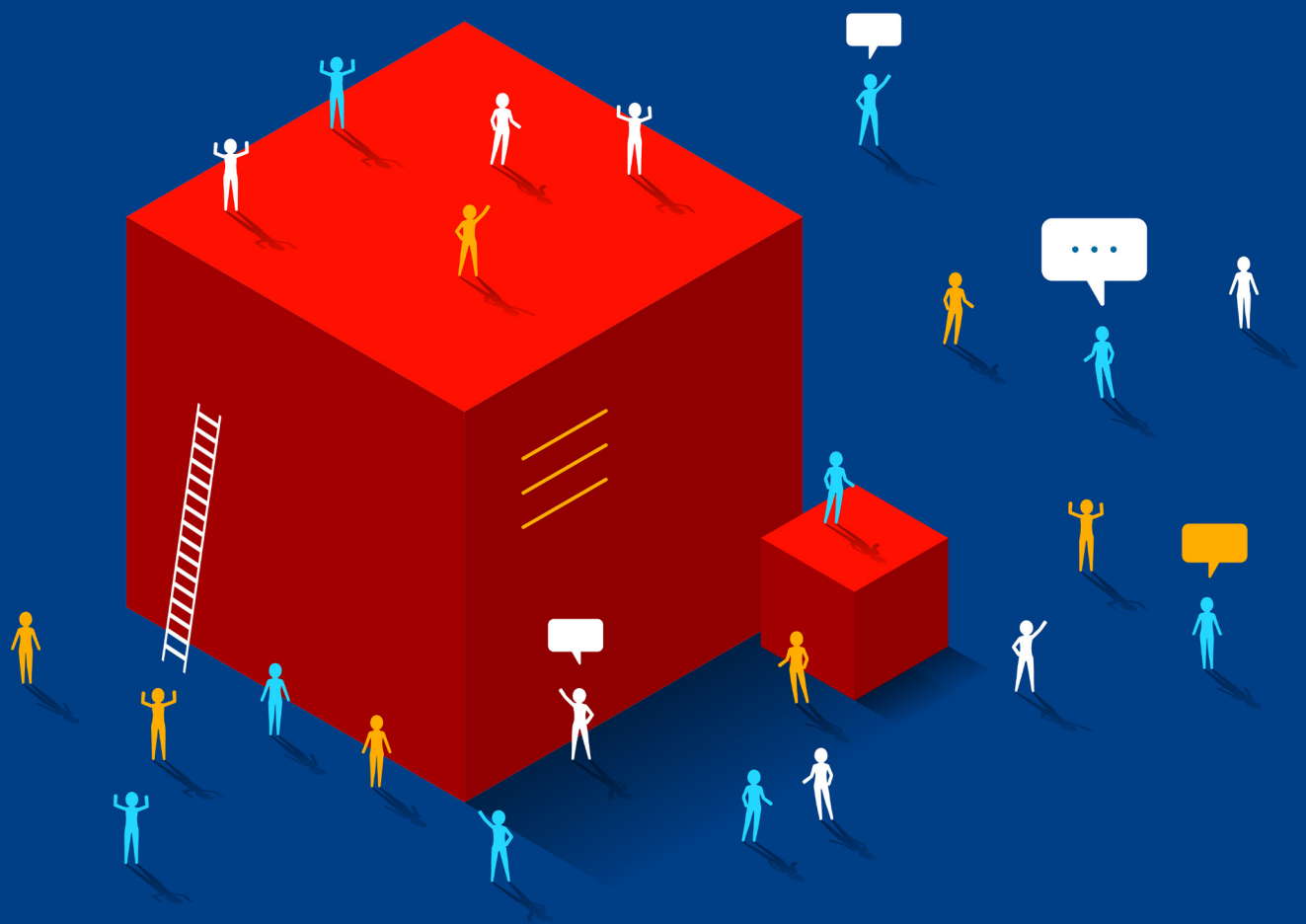
The Master of Urban Planning is a professional degree that focuses on Australian and international policy and planning pertaining to human settlements and how we cope with challenging population and environmental issues.

Tuition and application fees + Average living expense + Average travel cost

INNOVATION

The power of youth-based innovation

Nurturing India's future entrepreneurs



Hitesh Vaidya
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Nabamalika Joardar
Head, Innovation Unit of National Institute of Urban Affairs, New Delhi

(Reposted from ET Government)

In 2020, NASSCOM reported that more than 40 percent of its documented sample of entrepreneurs were aged between 25-44 years. In 2022, NASSCOM further reported that 18 percent of all start-ups, and 20 percent of all unicorns, have at least one female founder.

AT THE Bengaluru Tech Summit 2022, Prime Minister Narendra Modi noted, "Growth of technology and innovation in the country will be driven by the innovative youth and increasing tech access in the nation." Along those lines, youth-based innovation has had a significant impact on India's economic, social, and cultural economy.

In 2020, NASSCOM reported that more than 40 percent of its documented sample of entrepreneurs were aged between 25-44 years. In 2022, NASSCOM further reported that 18 percent of all start-ups, and 20 percent of all unicorns, have at least one female founder. The report further noted that over 360 open innovation programmes were set up by academic institutions alone. Notably, almost 80 percent of India's top 50 technology academic institutions have an incubator programme.

February saw the inaugural (Sherpa) meeting of the Urban20 (U20) engagement group, a city diplomacy initiative within the G20 ecosystem to raise critical issues of G20 cities during the G20 negotiations. Making a case for the role of youth in innovation, Chintan Vaishnav, Mission Director of Atal Innovation Mission, presented an example of an innovation hub consisting primarily of educational institutions in Ahmedabad.

THE HUB boasts of the LM College of Pharmacy that innovates in the field of pharmaceuticals and healthcare; VentureStudio at Ahmedabad University, which is a startup incubation center for diverse technological domains; SRISTI at Gujarat University, focused on reinforcing educational and institutional grassroots innovations; i-Hub, the Gujarat Student Startup and Innovation Hub, a multi-sectoral, multilayer startup assistance center; and the Indian Institute of Management, which houses the Centre for Innovation Incubation and Entrepreneurship, one of India's oldest incubation centers. The entire setup is contained within a 6.8-kilometer radius and presents an excellent example of 'innovation clusters', geographic concentrations of organizations and institutions that are focused on innovation. Such clusters allow the exchange of knowledge and ideas in close proximity and provide an excellent opportunity to young adults to explore avenues of innovation and entrepreneurship.

PROVIDING the youth with positive feedback and recognition for their early successes as well as opportunities to experience successful innovation, can help them develop their skills for innovation. This can increase their confidence in their ability to identify problems and find solutions, which are important life skills that are highly valued by employers. Although youth innovation is commonly associated with older teenagers and young adults, research has shown that teaching design, problem-solving, and critical thinking skills to younger children can also help develop their capacity for innovation.

At the U20 Sherpa Meeting, Ghulam Hassan Mir, who holds the position of Joint Commissioner, Planning in Srinagar, Jammu and Kashmir, proposed an intriguing idea to induce changes in the behavior of school students, "Once you involve children from the very beginning, there is no need to make a major shift in behavioral change." Small things taught to every age group can have a compounding result upon the culmination of their schooling.

THE INCORPORATION of a risk-taking appetite from a fairly young age has also been suggested by Inbal Arieli in her book titled 'Chutzpah: Why Israel is a Hub of Innovation and Entrepreneurship'. She introduces the concept of 'playing with junk', or unstructured play, where children are encouraged to play sans rules – climb chairs, handle heavy wooden objects, and play with rustling pots and pans. In a scenario where children are at an increased risk of hurt, Arieli makes a case for the introduction of ambiguity in the life of children, eventually resulting in adults who are equipped with better problem-solving skills, self-confidence, and the ability to persist in the face of adversity than their Caucasian counterparts. The National Education Policy, approved by the Union Cabinet in 2020, also emphasizes the need for entrepreneurship education, which aims to provide students with the skills and knowledge needed to start and run their own businesses.

COLLABORATION between industry and academia at the higher education level is a critical aspect of promoting innovation and preparing Indian youth for an entrepreneurial future. This collaboration plays a pivotal role in bridging the skill gap by providing students with industry-specific knowledge and skills, thereby reducing the time and resources that organizations spend on training new professionals.

FURTHERMORE, industry-academia collaboration promotes entrepreneurship by granting students access to industry mentors and networks, equipping them with the necessary skills to establish new businesses and create employment opportunities that can drive India's entrepreneurial growth. It is crucial to note that industry-academia collaboration is vital in fostering innovation and must be pursued collaboratively and cooperatively between the two entities.

Along these lines, the National Institute of Urban Affairs (NIUA) hosts multiple fellowship and internship programmes aimed at preparing the youth to be responsive to work environments, comprehend ethical practices related to professional development, and gain hands-on training and mentoring in urban development practice. During India's G20 presidency, NIUA as the technical secretariat of U20, in collaboration with the Youth20

> **"The youth require ample room to engage in creative exploration and develop a knack for innovation, both in virtual and tangible settings.**

engagement group, is hosting the National Youth Conclave, India's biggest youth summit that will bring together young minds and city champions to deliberate on pertinent themes of the U20 and Y20 priority areas, and foster bright leaders of tomorrow.

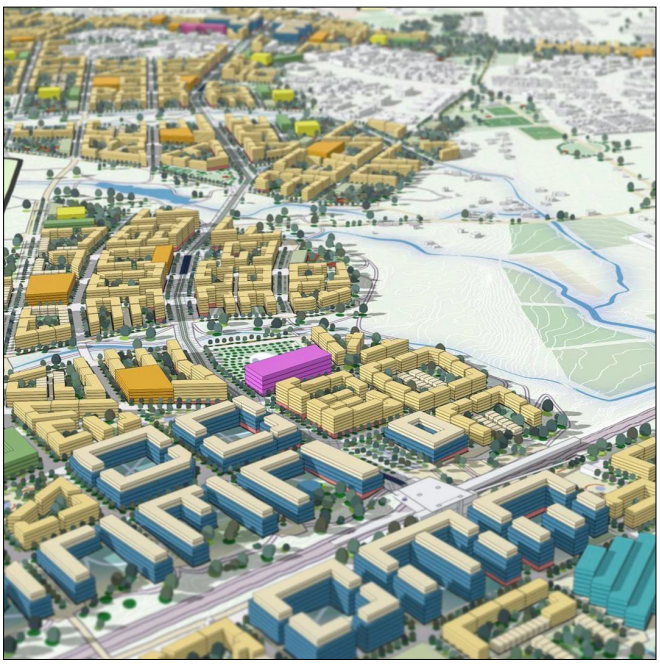
THE INDIAN YOUTH is not without role models in its 'Entrepreneurs Under 30' journey. Paytm's founder Vijay Shekhar Sharma began his entrepreneurial journey at just 19 years old with his first company, XS Corps. At 29, he started One97 Communications, the parent company of Paytm, which is now India's leading digital payments platform. Deepinder Goyal, the founder of Zomato, a popular food delivery and restaurant discovery platform, started his journey at the age of 20 with his first company, Foodiebay. At 28, he founded Zomato, which has since become a household name. Shashank ND, the founder of Practo, an online healthcare platform, started his journey at 24 with his first company, Enziq Solutions, an online marketing firm. At 28, he went on to found Practo, which has revolutionized the healthcare industry in India. Aditi Gupta is another young female entrepreneur who has made significant contributions to the field of women's health. At 23, she founded Menstrupedia, an online platform that educates girls and women about menstruation, breaking the taboo surrounding the topic in India. These individuals serve as inspiration for young Indians who aspire to become entrepreneurs, showing that age is not a barrier to success in the business world.

THE YOUTH require ample room to engage in creative exploration and develop a knack for innovation, both in virtual and tangible settings. Apart from physical spaces, they also need emotional assistance, opportunities to exchange thoughts with peers, adequate time to innovate, and guidance from adults. The presence of mentors and inspirational figures is crucial, as is access to information and technology. Most importantly, it is necessary to provide youngsters with the freedom to innovate without overly restrictive measures.

#ItsTimeToPlan

@hochc.landschaftsarchitekten *showcases how we can implement green areas into public spaces.*

@urbanplanniing *shows a great view of the village in Hormuz Island in Iran.*



@esrigram *shows how Uppsala, Sweden, uses a 3D digital twin to model growth and plan for the future.*

@landezine_com *shows Henning G. Kruses Plads square, Denmark, a lively forecourt that encourages community and gathering around a cymatic pool.*

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@thinkaboutmaps *shows a low-angle shot of San Francisco, California - USA.*

PLANNING THEORY

The Fractal Fabric

Weaving Fractal Geometry into The Urban Fabric

BY ANN ROCHYNE THOMAS

Abstraction, rooted in Euclidean geometry, is a deviation from literal depictions of nature, enabling exploration of its intricate forms and patterns. However, its rigid nature often overlooks the organic and dynamic qualities of urban spaces, leading to uninspiring environments devoid of diversity, character, and vitality.

The physical structure of Rome, Italy is much more of a fractal city with its roads going everywhich way and its intermingling of different urban functions.

By striking a delicate balance between fractal and Euclidean geometry, we can harmonise elements of order and adaptability, fostering the creation of urban environments that possess both structural coherence and dynamic vibrancy. This integration allows for the creation of spaces that are visually captivating, functionally efficient, and highly responsive to the evolving needs of diverse communities.

Traditional urban planning sought to bring geometric order to cities in an effort to prevent chaos, inefficiency, and fragmented social structures. The focus was on introducing predictability and stability to urban systems. However, the overemphasis on rigid order is now recognised as hindering creativity, organic growth, and the development of responsive urban environments.

Contemporary urban planning embraces innovative approaches such as fractal geometry and organic design principles to overcome these limitations. It acknowledges the need for a balance between Euclidian and fractal geometry principles. This paradigm shift recognises that order can emerge from what may initially appear as disorder. It realises the value of allowing cities to evolve organically, encouraging innovation, and accommodating diverse needs. By employing fractal geometry, planners can create

“ Contemporary urban planning embraces innovative approaches such as fractal geometry and organic design principles to overcome these limitations.

urban environments that are vibrant, inclusive, and sustainable, acknowledging the inherent complexity and dynamism of cities.

THE TRANSFORMATIVE ROLE OF FRACTAL GEOMETRY IN SPATIAL PLANNING AND DESIGN

Fractal geometry plays a crucial role in optimising space utilisation, resource distribution, and efficiency within diverse natural systems. Fractal patterns in nature, such as branching networks and self-similar shapes, can be applied to urban contexts. Fractal patterns optimize land use and traffic flow, promote connectivity and social interaction, and guide organic and sustainable urban growth.

Fractal-inspired designs enable efficient resource distribution by replicating natural patterns found in river networks and tree branching. By emulating these intricate patterns in human-made systems, we can achieve higher levels of efficiency and resilience.

Incorporating branching networks and self-similar shapes in transportation networks and street layouts reduces congestion. It provides multiple pathways and improves connectivity, allowing for more direct and efficient movement of people, goods, and services. This reduces travel distances, leading to improved resource distribution and utilisation.

Moreover, fractal patterns help optimise the distribution of resources by promoting accessibility. By incorporating fractal principles in the placement of services and infrastructure, planners can ensure equitable access for all residents. This enhances resource distribution by reducing disparities and ensuring efficient utilisation across the urban area.

Fractal geometry also contributes to efficient resource distribution through its ability to utilise space effectively. Fractal-inspired designs allow for the efficient use of available land, minimising wasted or underutilised areas.

The adaptability of fractal structures also enhances the long-term functionality and resilience of urban areas, enabling cities to respond and adjust to challenges such as climate change and population growth.

The inherent aesthetic appeal of fractal patterns found in nature positively impacts human well-being, by reducing stress and fostering creativity. By integrating fractal elements into our design practices, we have the opportunity to create visually captivating and engaging urban environments that prioritise connectivity, resilience, aesthetics, and well-being. It promotes the creation of harmonious urban landscapes that provide functional efficiency, while also fostering a sense of place.

STRIKING A BALANCE BETWEEN EUCLIDIAN AND FRACTAL GEOMETRY

Abstraction plays an indispensable role in urban planning and design, providing a necessary tool for conveying the essence, character, and purpose of a place. It establishes a common language of design, and promotes a shared aesthetic vision. Through abstraction, designers can create visually captivating compositions that actively involve viewers, shaping the visual identity and functionality of the urban environment. However, striking a balance between abstraction and practical considerations is crucial.

Contextual sensitivity is key as designers harmoniously integrate abstract and fractal elements, considering cultural, historical, and environmental aspects. By combining social, cultural, and environmental considerations with artistic expression, a cohesive and sustainable urban fabric can be developed.

“

Abstraction plays an indispensable role in urban planning and design, providing a necessary tool for conveying the essence, character, and purpose of a place.

Emphasising abstraction at larger scales and incorporating fractal patterns at smaller scales allows urban planners to strike a balance between order and chaos, fostering visually appealing, functional, and responsive environments.

DISCOVERING ORDER IN CHAOS

Fractals serve as a bridge, connecting irregularity with Euclidean geometry and revealing the potential for complexity and beauty within apparent disorder. Embracing the principles of fractal geometry allows urban designers to create spaces that strike a harmonious balance between structure and organicity.

The incorporation of fractal principles in urban design contributes to the development of sustainable and vibrant cities that seamlessly integrate with the natural environment, leading to cohesive and thriving urban landscapes, that align with the inherent wisdom of the natural world.

POLICY

NO FSI, NO EXAM

BY PARTH MAKWANA

The case study of Hyderabad's NO FSI Regulation

I CAME ACROSS the intriguing title, "No FSI, No Exam," during an urban planning conference at CEPT University. In this setting, Mr. Vishwanath Sista, a renowned urban planner, humorously highlighted how competent authorities perceive the Floor Space Index (FSI) conundrum. This led me to delve deeper into the topic, mainly focusing on Hyderabad's unique approach to tackling this challenge. Implementing a "No FSI" policy in the city has garnered attention and sparked debates among urban planning enthusiasts. This article explores the implications, importance, pros, and cons of Hyderabad's no FSI regulation and examines how the absence of an FSI cap can address rapid urbanization. Additionally, we delve into the functioning of zoning regulations and their role in shaping cities.

In Hyderabad's urban development context, the no FSI policy carries significant implications. It challenges the traditional approach to urban planning by removing restrictions on floor area ratios and liberating developers to construct buildings based on available land and other regulations. The need for such a regulation arises from the growing demand for housing and commercial spaces in cities experiencing rapid urbanization.

THE IMPORTANCE of the no FSI regulation lies in its ability to foster economic growth and facilitate the creation of affordable housing options. By eliminating FSI restrictions, developers gain the flexibility to respond to changing market dynamics and meet the city's evolving needs. This policy encourages innovation in architectural design and construction techniques and addresses the pressing issue of affordable housing by increasing the supply of units on a given plot of land.

The no FSI regulation also has significant implications for affordable housing. With the flexibility to build more units on a given plot of land, developers can increase the supply of housing options. This can decrease housing costs and provide more affordable choices for residents. The policy aligns to promote inclusivity and address the housing needs of a diverse population.

In terms of importance, the no FSI regulation enables Hyderabad to adapt to changing market dynamics and demands. Cities are dynamic entities, and their requirements for various types of spaces fluctuate over time. By removing FSI restrictions, developers can respond swiftly to these changing needs. This flexibility fosters a dynamic urban environment that attracts investments and promotes economic growth.

Moreover, the no FSI policy has the potential to stimulate economic growth. The increased construction activity generates employment opportunities in the construction sector and has a positive ripple effect on related industries. This can contribute to the overall development and prosperity of the city.

UNLIMITED FSI has several advantages. It has helped to make Hyderabad a more affordable city, as developers can build more units on a given plot of land. It has also helped to boost the city's economy, as more people are moving to Hyderabad to work in the IT sector. However, the unlimited FSI has also led to some problems. One of the biggest concerns is that it is putting a strain on the city's infrastructure. The roads are becoming increasingly congested, and there is a shortage of schools, hospitals, and other amenities. Another concern is that the unlimited FSI is leading to a loss of open space. As developers build more and more high-rise buildings, there is less and less land available for parks, playgrounds, and other green spaces.

The Floor Space Index (FSI) is often seen as just a numerical value without providing a comprehensive understanding of its implications. It is often debated how much FSI

should be increased or capped while formulating statutory plans. The challenge lies in ensuring that citizens and practitioners clearly understand what the FSI number signifies and its real-world implications.

HYDERABAD'S unique approach to the FSI conundrum goes beyond simply mentioning a cap or number. Instead, the city tracks FSI calculations based on zones and Development Control Regulations (DCR). This approach acknowledges that FSI is not a standalone factor but needs to be considered in conjunction with zoning regulations and development guidelines.

By closely monitoring FSI calculations based on zones and DCR, Hyderabad clearly understands the FSI that will be tentatively reached in each particular zone. This approach allows the city to grasp the potential intensity of development and ensures that it aligns with the intended urban planning goals.

Hyderabad's focus on tracking FSI calculations based on zones and DCR offers several advantages. Firstly, it allows for a more nuanced approach to development. Rather than relying solely on a fixed FSI number, the city can tailor development guidelines and regulations based on each zone's specific characteristics and requirements. Additionally, by maintaining a record of FSI calculations, Hyderabad can effectively manage the intensity of development and prevent haphazard growth. It ensures that the city maintains control over the scale and density of construction, preventing overcrowding and strain on infrastructure.

Furthermore, this approach enables better coordination between various stakeholders involved in the planning and development. Practitioners, policymakers, and citizens can better understand the potential FSI in each zone, facilitating more informed discussions and decision-making.

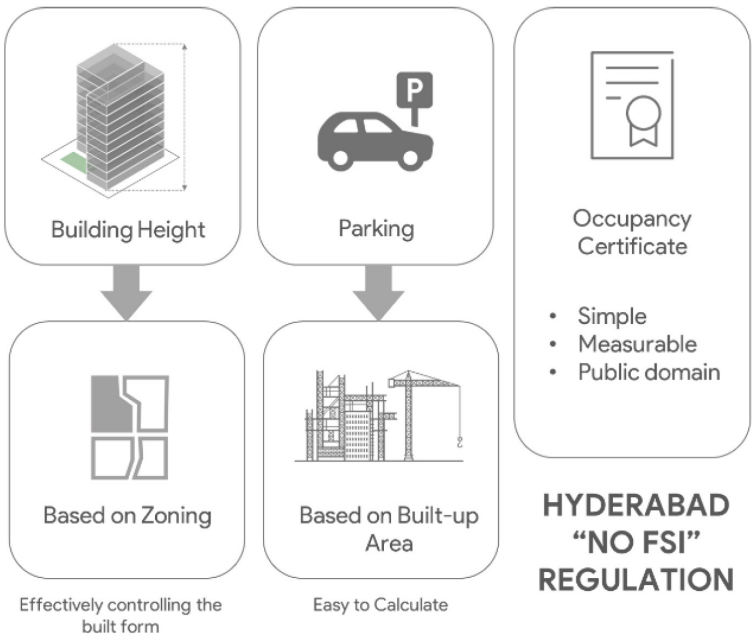
WHILE HYDERABAD may not explicitly mention a cap or numerical value for FSI, its emphasis on tracking FSI calculations based on zones and DCR showcases a more holistic and contextualized approach to urban planning. It recognizes that FSI is not a one-size-fits-all solution and needs to be evaluated in the larger context of zoning regulations and development guidelines.

Hyderabad's approach to FSI highlights the importance of moving beyond a narrow focus on numerical values. By considering FSI in conjunction with zoning regulations and development guidelines, the city ensures a more comprehensive understanding of its implications. This approach promotes better urban planning outcomes, informed decision-making, and a more balanced approach to development that considers each zone's unique characteristics and requirements. The government of Telangana is considering introducing some regulations on FSI in Hyderabad. However, it is not clear when these regulations will be implemented.

Some of the exciting ways in which they regulate the development without telling the magical number of FSI is regulated can be seen in the diagram, 'Hyderabad "no FSI" Regulation'.

The absence of Floor Space Index (FSI) regulations in Hyderabad may give the impression of free or unlimited FSI. However, it is essential to note that even without explicit FSI caps, development is still controlled through other means, such as height restrictions and setbacks. These regulations ensure that the form and scale of buildings remain within acceptable limits, promoting orderly and balanced development.

WHILE FSI regulations traditionally provide a direct measure of the permissible built-up area, the absence of specific FSI caps in Hyderabad has focused on other development controls. Height restrictions dictate the maximum height that buildings can reach, preventing excessive vertical growth and maintaining the city's visual character. Setback requirements specify the minimum distance between buildings and property



boundaries, ensuring adequate light, air, and privacy for existing and new developments.

BY RELYING on height restrictions and setbacks, Hyderabad effectively manages development intensity without explicitly using FSI as the sole parameter. This approach offers flexibility to developers while maintaining control over the built environment. It allows for creative architectural solutions and encourages innovative designs within the defined height and setback limits.

Furthermore, the absence of FSI regulations in Hyderabad has triggered a wave of redevelopment in the city. Developers and property owners are motivated to maximize the utilization of available land due to the freedom offered by the no FSI policy. This has led to revitalizing older areas and replacing outdated structures with modern, efficient, and aesthetically pleasing buildings.

THE REDEVELOPMENT trend in Hyderabad has several advantages. It enhances the city's urban fabric and contributes to economic growth and job creation. Older properties can be upgraded and transformed into vibrant mixed-use developments, meeting the evolving needs of the city's residents and businesses. The absence of FSI restrictions allows for flexibility in adapting and optimizing land use, leading to more efficient and sustainable development practices.

However, it is crucial to strike a balance between redevelopment and preservation. While the absence of FSI regulations promotes growth and revitalization, care must be taken to ensure the preservation of heritage buildings and the city's overall character. Zoning regulations, heritage preservation guidelines, and design review processes are vital in safeguarding the city's architectural heritage and maintaining a harmonious blend of old and new developments.

While the no FSI regulations in Hyderabad provide a sense of freedom or unlimited potential, development is still controlled through height restrictions, setbacks, and other regulations. This approach allows for creative architectural solutions while maintaining orderly and balanced development. The absence of FSI regulations has also triggered a wave of redevelopment, revitalizing the city and contributing to economic growth. However, careful consideration must be given to preservation and heritage conservation to ensure a harmonious and sustainable urban environment.

AS WITH ANY POLICY, Hyderabad's no FSI regulation has advantages and disadvantages. On the positive side, it encourages creativity and pushes the boundaries of architectural design. Developers can explore innovative solutions to maximize space utilization, resulting in visually appealing and architecturally diverse cityscapes.

Furthermore, the no FSI policy has the potential to boost economic growth by attracting investments and generating employment opportunities in the construction sector. The increased construction activity has a positive multiplier effect on related industries, contributing to the overall development and prosperity of the city.

However, concerns arise regarding uncontrolled density and its impact on infrastructure and quality of life. Critics argue that haphazard development can lead to overcrowding, strain on infrastructure, and compromised livability without proper regulations. To mitigate these concerns, it is crucial to implement effective zoning regulations that ensure orderly development and preserve the character of neighborhoods.

ZONING regulations play a pivotal role in shaping cities and guiding development. While Hyderabad's no FSI regulation removes restrictions on floor area ratios, zoning regulations remain crucial for orderly growth. They provide comprehensive guidelines for land use, building heights, setbacks, and other factors contributing to urban planning. Zoning regulations ensure compatibility between neighboring properties, protect public spaces, and consider environmental sustainability.

By integrating the no FSI policy with well-designed zoning regulations, Hyderabad can achieve a harmonious balance between development and livability. This approach enables the city to adapt to changing needs, respond to market dynamics, and preserve different neighborhoods' character, heritage, and environmental sustainability.

HYDERABAD'S no FSI regulation, humorously referred to as "No FSI, No Exam," challenges traditional notions of urban planning and addresses the complexities of rapid urbanization. By eliminating FSI restrictions, the city aims to foster economic growth, encourage architectural innovation, and provide affordable housing options. However, the success of this policy lies in implementing effective zoning regulations. These regulations ensure orderly development, preserve the character of neighborhoods, and safeguard the city's overall livability.

As urban planning professionals continue exploring innovative approaches, Hyderabad's no FSI policy is an intriguing case study. It demonstrates the potential benefits of flexible development policies when combined with well-crafted zoning regulations. By finding the right balance between development and livability, cities can shape vibrant, sustainable, and inclusive urban environments that meet the evolving needs of their residents.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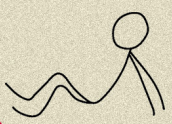

there are no jobs...

BY ISHITA SARASWAT

The job search process can be both exciting and daunting, especially for bachelor's students in planning. While master's students may have a clearer path ahead, bachelors students often find themselves facing a multitude of options and uncertainties. In this article, we will explore some strategies to help aspiring planners make informed decisions about their career paths, shed light on the dilemma of pursuing a master's degree or gaining work experience, and provide tips to enhance their chances of success in the competitive planning industry.

How does one determine their preferred planning field?

A valuable piece of advice I received is to reflect on your college coursework. Take a moment to identify the subjects that piqued your interest and the ones that left you uninspired. By crossing out the disliked subjects and circling the ones you enjoyed, you can gain valuable insights. This exercise proves particularly useful for those considering a direct transition to a master's program after graduation. If this method falls short, another approach is to explore different topics or field issues by writing articles. This allows you to discover the subjects that consistently rise to the top of your list.

Pursuing a Master's or Gaining Work Experience?

The decision between pursuing a master's degree and gaining work experience is a common dilemma for bachelor planners. While there is no one-size-fits-all answer, understanding your own professional growth needs can help. The advice I received from professors and mid-career planners was to work for a few years before committing to a specialization. Conversely, my parents and acquaintances believed that pursuing a master's degree immediately after graduation was the right path. Working in the field for some time exposes you to various related disciplines, providing fresh perspectives and newfound clarity. It helps you decide if planning is indeed your calling or if you are drawn towards other allied or non-allied subjects. Moreover, even within planning is it towards consultancy work or academia and research.

A third broad idea that graduating planners should consider is getting into public services. The rigorous multi-disciplinary education through these four years prepares us to understand the role of generalists in public administration like civil servants. Alternatively, a high number of graduating planners also consider taking up positions in state planning departments and development authorities. Since majority of these recruitments require Masters in Planning, a wiser idea would be to enroll in masters and start preparing for these examination-based recruitments.

Although when making the decision between pursuing a master's degree or gaining work experience, it is important to consider your social settings and life goals. Unlike a rational planning approach, a rational- nonsocial approach would not be good.

Preparing for the Job Search

It's also acceptable to take a break and plan out your career trajectory after graduation. If you decide to take a break, try to work on your skills and take up tasks that will add value in your life and career. In the end, what will matter is self-growth, be it through a specialization degree or a job or preparations. Navigating the job search and making career choices in planning can feel overwhelming, but with the right strategies, you can find your path.

While you might introduce yourself as physical planner through your CVs who knows about land use planning, transport planning and so on- A large chunk of jobs in the market available for Bachelor students might not look like 'Associate planner or Junior Planner': instead, you will find jobs titles as research associates, analysts, young professionals and so on. These jobs may or may not be in core master planning for neighborhood planning fields but fit in with the learnings from your planning school.

If you have decided to enter the workforce after graduation, there are several steps you can take to position yourself for success:

Showcasing Your Skills

Move beyond traditional portfolios and develop skill samples that highlight your abilities. Whether it's creating GIS maps, showcasing data analysis expertise, or demonstrating your technical writing skills, provide tangible evidence of your capabilities. When a recruiter asks to share a relevant work sample- that doesn't mean you send in your studio work as it is, always tailor the sample. If you don't have a relevant sample, never shy away from customizing and remaking samples- It always helps.

Customizing Application Materials

Tailor your cover letters and CVs for each job application. Invest time in researching the organization and position to ensure your application aligns with their requirements. By personalizing your materials, you demonstrate your genuine interest and increase your chances of catching the recruiter's attention. A core planning CV showcasing your semester work is not a good fit for a research analyst role at a think tank working on climate change.

Leveraging LinkedIn

Embrace the power of LinkedIn by creating an engaging profile and actively participating in the platform. Don't be intimidated by the achievements of others; instead, customize your assignments and share them on LinkedIn to showcase your skills and passion. Take up personal skill developments and showcase them on LinkedIn through posts, commentary and writeups. Join relevant groups, contribute to discussions, and connect with professionals who can offer guidance and potential job referrals.

Expanding Your Network

Break out of your comfort zone and connect with professionals in the planning industry. Attend conferences, workshops, and networking events to build relationships that can provide guidance and open doors to future opportunities.

Tapping into Alumni Connections

Reach out to alumni who have walked the same path as you. They possess valuable insights into the field and can offer advice on job applications and potential referrals. Remember, a strong referral can significantly enhance your chances of securing a desired position.

Embracing Opportunities

Don't limit your job applications solely to core planning organizations. Consider fellowships and positions in non-core planning entities, as they can offer valuable learning experiences and a chance to leverage your multidisciplinary skills. A lot of organizations in the market work closely with planning or allied fields for which, Bachelor planners are thoroughly trained for. Reach out to professionals working in these organizations and try to get a chance to work with them.

Take up Internships or Fellowships

Internships or Fellowships play a crucial role in shaping your career trajectory. Consider pursuing these to gain. Don't hesitate to reach out to your previous internship organization or colleagues for support and potential job opportunities.

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IMAGERY

Satellite Watch

It is interesting to see how basic elements like buildings, public spaces, streets, and natural features interact to give different urban forms. Let's appreciate our beautiful cities for what they are through the lens of a satellite.

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Image © 2023 Maxar Technologies

London, 2023

Google Earth
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OPINION

Perception of Planning

On the perceptions of what 'urban planning' entails: all that glitters, is not gold

BY SIDDHESH R. KUDALE

UNLIKE sectors like sociology and anthropology or engineering whose scope is clearly defined over the years, Urban Planning as a field of study or application lacks a concise understanding of its boundaries. While the more normalised version of Urban Planning, despite geospatial location, usually establishes that 'planning' deals with clean streets, infrastructure provision, good housing and others of the sort, it also intervenes in issues of social justice, structural inequality and poverty. Colloquially, the former is what is understood as 'true' visible development, while the latter is conveniently ignored.

ANANYA ROY in her essay on Subaltern Urbanism, gives extensive evidence of the voyeuristic nature of Slum tourism and poverty porn, and also talks about the misrepresentation of slums in western popular culture and academia. Danny Boyle's widely acclaimed 'Slumdog Millionaire' though a strikingly mind-blowing piece of art, will continue to dictate the associations between poverty and informality, the perception of the global south, and the also reinforcing the rationale that decides the level of 'development'. Similar comparative works of art on the Los Angeles Skid-Row for instance go unnoticed or rather un-acclaimed and understudied as questions of equity and justice, regardless of the tightness of governance in either context. If this is not modern-day coloniality, then

what is? Roy's extensive critique and observations of Crerar's piece after he physically visited Dharavi after watching the movie explain in enough detail what is wrong with the perceptions of poverty, but fail to make the connection how the global north, to this day, in terms of global perception works as a gatekeeper of what is right and wrong, like the bourgeois elite that plan cities sitting in the comfort of their own air-conditioned offices, without admitting its own privilege.

THE SUBJECTIVITY that Gayatri Chakravarty-Spivak starts her essay 'Can the subaltern speak?' with, while talking about marginalised subjects of the state, is also applicable to modern global entities as individuals. The structural suzerainty of the west on the east, or of the north on the south reinforces the ideal that capital and economic growth is development, while also making sure that the discourse of global development remains a pyramid scheme where only the rich benefit off of the poor. While this understanding of global affairs is well understood, how does it relate with urban development, one may ask?

URBAN PLANNING, is, in essence, sociology in practice with a bone of social justice, when it comes to the non-physical understanding of it. While global issues are at a vastly different scale as compared to urban development, there are two ways in which they directly impact urban planning.

THE FIRST relationship between the two comes with the flow of capital to and from countries that eventually boils down to urban development practice. The various indices released by the United Nations from time to time, for instance, are a uniform scale of measurement of success and failure, metaphorically like the tree-climbing race between a fish, an elephant, a dog and a monkey. The expression of urban form and character, both in terms of physical and sociological expression are diverse, dynamic, and incomparable, especially at a global scale. Furthermore, circling back to the global flow of capital whether in the erstwhile colonial world or today, has always been along the lines that there is no such thing as 'free' money. Swati Chattopadhyay in her essay on subalternity talks about the culture of capitalism, stating the role of mercantile cities under the colonial influence in today's growing urbanisation. Today, the high-interest rates that the world bank 'offers' to countries that regularly 'default' loans, are a circular systematic structure that ensures the firm positioning of global poverty in global politics, and the same boils down to urban growth. Poorer nations end up pushing more money and capital into urban 'development' to ensure that cities, which are poster children representing the images of nations look and sound more 'developed', in order to come out of the cyclic spiral of global poverty. And what is the end product?

THE RELATIONSHIP of Fordism in the early 20th century with social and environmental injustice and its implications on economy and society has been widely studied, however, urban development of today seems to be stepping the same shoes. Countries the world over are resorting to a mass face-lifting of cities with the help of privatisation (whether public or state-sponsored) in order to win the race of being a globalised economy, which in turn creates a cyclic dynamic of rural-to urban-migration and increasing the size of and inequality in cities, especially so in population endowed and naturally climatically habitable countries of the global south.

THE SECOND relationship between the issues of global dynamics and urban development turns out to be more of a socio-psychological nature, as a modern form of colonising the mind.

This also relates back to the face-lifting of global cities, which in turn influences the general public to emulate the same ideals, where the capital formation is assigned a greater value than social growth, also embedding the idea that Western nations, which are essentially 'rich', as portrayed momentarily, are the be-all-end-all goal for urban development. Branding of cities, is a good example of this phenomenon, where instances such as 'Pune is the Oxford of India', or 'Ahmedabad is the Manchester of India' are propagated to refer to cities in the global south, inherently producing the almost inquisitive human question along the lines that if Ahmedabad is so good, how much better would Manchester be? And if this is not inculcating/ indoctrinating an inferiority complex, what is? This neo-colonial perspective is what needs to be tackled urgently in today's India, the urban 'development' of which is in full swing thanks to the colonized minds of those both in authority and civilization across the nation.

WE MUST REALISE that it is not a fair competition: - towing the line is never taking us there, though we are doing an okay job at it. The only way out would be to alter the game to be more just to all across the globe. However, it must be reminded that urban development is as much a part of this game for global recognition: and us as planners being the gatekeepers of it must remember that all that glitters is most definitely not gold.

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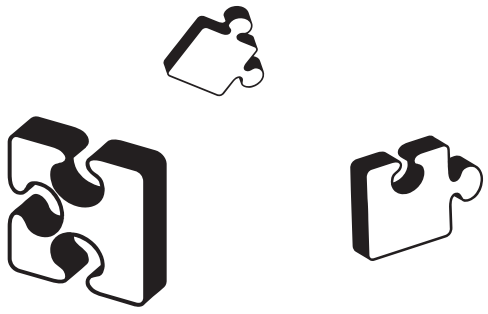

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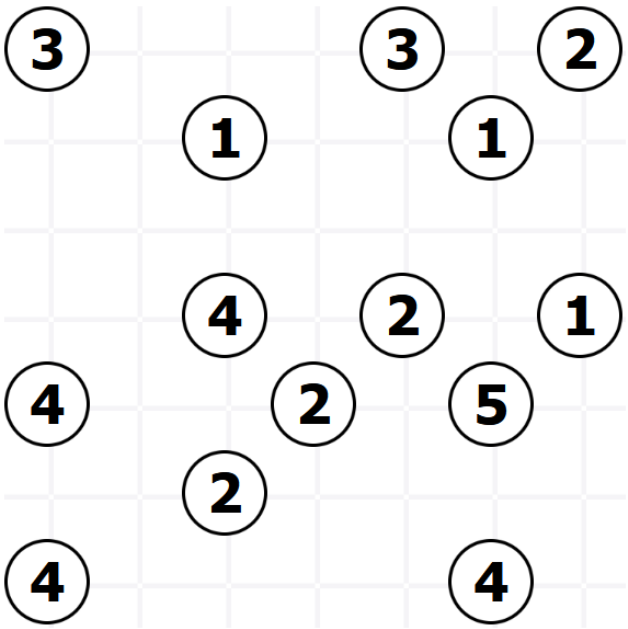


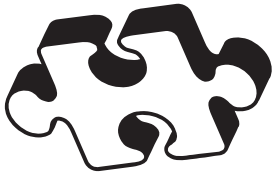
Metro Hashi

Create one single metro line through all stations.

The goal is to connect all of the metro stations into a single connected group by drawing a series of lines between the stations.

The lines must follow certain criteria:

- *They must begin and end at distinct stations, travelling a straight line in between.*
- *They must not cross any other lines or stations.*
- *They may only run orthogonally.*
- *At most two lines can connect a pair of stations.*
- *The number of lines connected to each station must match the number on that station.*



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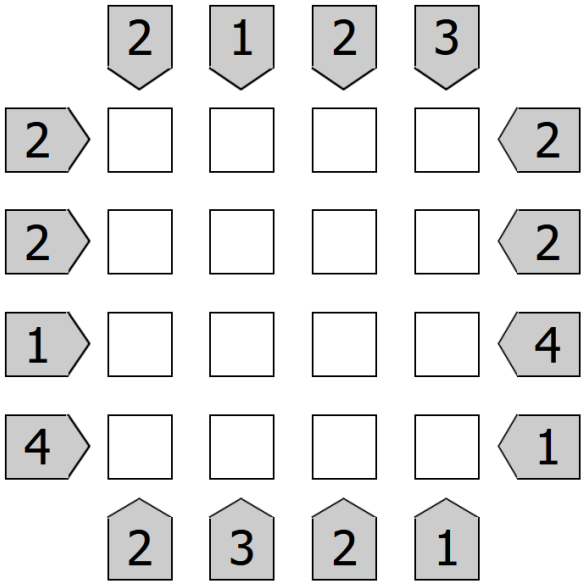
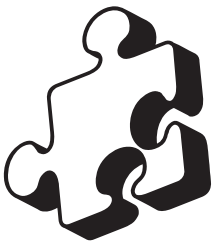


Skyscrapers

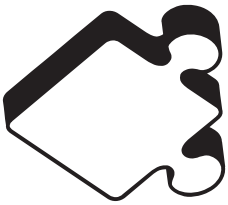
The objective is to place skyscrapers in all cells on the grid according to the rules:

- The height of the skyscrapers is from 1 to the size of the grid i.e. 1 to 4 for a 4x4 puzzle.
- You cannot have two skyscrapers with the same height on the same row or column.
- The numbers on the sides of the grid indicate how many skyscrapers would you see if you look in the direction of the arrow.
- Write numbers in each cell to indicate the height of the skyscrapers.



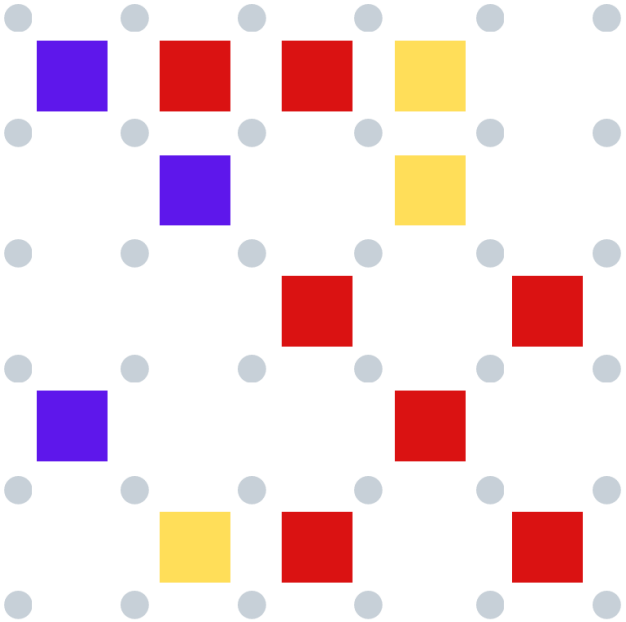
Think again!

TIME



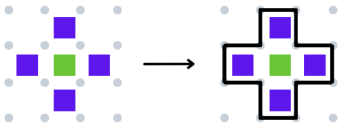
Stuck in a puzzle?
Scan this QR code to find solutions to all the puzzles below

Difficulty ●●●●●



Loop the Landuse

Make a single loop around the landuse colours.
Make one single loop around all the landuse colours. There are no crossings or loose ends. There is only one line which is continuous.



Each landuse colour indicates exactly how many lines should be drawn around it. Cells which do not have any colour inside can be surrounded by any number of lines.

Here's a key for the landuse colours
Industrial - surrounded by 3
Commercial - surrounded by 2
Residential - surrounded by 1
Recreational - surrounded by 0

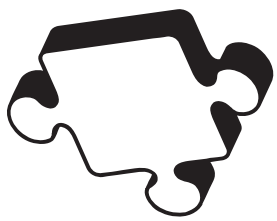
Difficulty ●●●○○

u	m	o	u	u	i	e	n	r	v	i	a	n	y	h
t	n	i	r	p	e	u	l	b	u	d	o	b	c	o
w	f	r	i	e	n	d	l	y	c	i	t	i	e	s
r	p	t	r	m	p	t	u	k	t	g	r	o	x	d
s	b	a	a	w	p	h	x	c	a	s	u	b	p	z
u	u	f	e	x	d	x	i	n	a	v	e	q	e	o
f	s	o	v	v	j	d	d	b	v	t	o	f	r	y
a	p	s	t	s	s	h	e	h	j	k	i	p	i	u
e	w	e	f	i	i	t	y	o	p	c	f	o	e	l
s	c	k	r	n	u	n	q	p	u	l	k	x	n	i
h	a	u	a	e	c	q	s	d	g	h	y	x	c	n
n	j	g	c	o	o	l	i	n	g	z	y	s	e	h
n	a	j	t	d	e	s	a	b	h	t	u	o	y	d
r	l	o	a	x	f	v	z	s	u	a	f	z	y	b
b	a	k	l	j	q	m	k	a	f	i	b	c	s	g

Word Search

Find the words in the puzzle.
Words can go in any direction.
Words can share letters as they cross over each other.

Blueprint	FSI	Subjectivity
Cooling	Friendly Cities	Ubiquitous
Education	Gandhinagar	Youth-based
Experience	Jurisdiction	
Fractal	Lifestyle	



NATURE

Nature's Blueprint for Progress

BY DEBRAJ DEKA

Unlocking Guwahati's Green Potential Through Planning

The rapid pace of urbanization is a growing concern, as it threatens to compromise the delicate balance between development and the preservation of its natural treasures. Urbanization sets in motion a series of interconnected elements: a mounting population surge, rapid industrialization, and sprawling infrastructure development. These elements intertwine to form a vicious cycle of urban expansion.

Lying along the banks of the Mohabahu River Brahmaputra, Guwahati City is a prominent metropolitan city in the northeast region of India. Guwahati stands as Assam's largest urban agglomeration, encompassing 23.89 per cent of the state's total urban population. However, Nature has been a key ingredient of Guwahati's culture. This further gets highlighted in the first goal of the Guwahati Masterplan, 2021 which focuses on Guwahati's sensitive Natural environment

Despite having such a diverse and dynamic biodiversity, Guwahati remains among the most polluted cities in India as shown in a study by the Delhi-based Centre of Science and Environment (CSE). This brings

G.S. Road, Guwahati.
PIC CREDITS by Author

> **"More interest is needed on how planning is being performed which includes how land use is being allocated to effective mitigation measures.**

up a fundamental question on the urgent need for environmental conservation and sustainable development in the region. To understand Guwahati's challenges due to urbanisation, two crucial factors come into play.

THE UNDULATING NATURAL RIVER SYSTEM

The natural river system poses to be one of the most affected victims of urbanisation. The Bharalu and Bahini river system which spines along the heart of Guwahati remains among the 71 most polluted stretches of river in the country, according to a study by the Central Pollution Control Board (Assam Tribune,2008). This doesn't only affect the flora and fauna dependent on the river system but also brings up a huge question of the livability of citizens living beside the river. It has essentially turned into overflowing sewage leading to the rise of foul smell and breeding grounds for mosquitoes and other harmful insects.

Furthermore, it also harms the water bodies which include prominent sites like Deepor Beel which is one of the Ramsar sites. Records show more than 150 birds accounted for more than 9 threatened species which increases its importance not just at the city level but at a regional level. IBA (Important Bird Area) monitoring assessment gives a high threat score which makes it quite vulnerable to expanding urbanisation.

Moreover, the ecosystem also is symbiotically related to the tribes who rely on the water systems like Deepor Beel for their socio-economic needs. This altogether had led to a plethora of modern urban problems which majorly include flash floods which have been an increase in Guwahati and a major cause of the degradation of QoL.

THE DEPLETING NATURAL FOREST COVER

A study was conducted to understand the forest cover. During the study period, the dense forest areas declined from 19.8% to 11% at an annual rate of 0.13 hectares (RK Mandal,2010). Further studies found that dense and moderately dense forests in the region decreased by 44% and 43% respectively. This remains a major hurdle to the existing flora and fauna of the region which is home to 332 species of terrestrial vertebrates which includes 214 species of birds to 36 species of mammals.

Studies on Nilachal Hill showcases a staggering rate of increase of urban built up which has increased 57% from 2000 to 2013 (Hussain, Tanvi & Goswami, Dulal.,2018). This hill range serves as a crucial corridor for leopard movement within the city which has been compromised severely over the decades with increased urbanisation. The depletion of natural cover poses a threat to the diverse flora and fauna and also leads to a rise in instances of wildlife stranded within the urban landscape. This, coupled with the alarming increase in human-leopard clashes, underscores the urgent need for comprehensive conservation measures.

This just remains a twig of much broader environmental threats that demand immediate attention and concerted efforts to safeguard the natural heritage and restore the ecological balance of Guwahati.

The Bharalu River along Zoo Road, Guwahati, bearing the brunt of sewage dumping. PIC CREDITS by Author

EXPLORING SOLUTIONS

Caught between expanding urbanisation and a depleting environment, Guwahati's battle for balance isn't unique. Urbanisation in Southeast Asia has been responsible for the loss of over 3 million hectares of forest between 2000 and 2010 (FAO, 2010).

Similar cases all over the world exhibit unique opportunities and approaches adopted to tackle the imbalances. Major interventions like nature-based solutions (NBS) have proven to be resilient and hold the key to restoring delicate ecological balance while fostering sustainable development. Singapore gives a key understanding of how NBS proves not only to be a successful intervention but also a revenue-generating model. The restoration of Singapore's Bishan-Ang Mo Kio Park and Kallang River has resulted in significant cost savings, estimated at approximately $57 million in capital expenditure compared to the baseline solution. The socio-economic benefits of the project indicate an annual remuneration of approximately $105 million, allowing for cost recovery within a single year.

Guwahati is blessed with its natural richness and diversity which makes approaches like NBS a viable and feasible way forward. NBS not only aligns with the city's natural heritage but also presents an opportunity to foster a sustainable and harmonious relationship between human activities and the environment. Furthermore, this approach proves to be a viable revenue generation model for the city, as it opens up avenues for ecotourism, sustainable use of natural resources, and the development of green industries which could form a viable revenue source for the local bodies.

Furthermore, urban planning too has a role that integrates sustainability principles into every aspect of urban development. Effective urban planning should prioritise the preservation of natural habitats, green spaces, and water bodies, ensuring their integration into the urban fabric. There remain multiple ways through which this could be achieved. Moreover, engaging in participatory planning processes is crucial to ensure that the voices and needs of local communities, as well as indigenous tribes, are heard and respected

THE WAY FORWARD

Guwahati represents just one of the multiple growth poles of urbanisation in Northeastern India, highlighting the urgent need for proactive measures to tackle environmental challenges and foster sustainable development in the region. This calls for proactive measures, such as the adoption of Nature-Based Solutions (NBS), to address the environmental challenges and promote sustainable development in the region. NBS can be a potential solution that goes beyond Guwahati and extends to other urban centres of Northeastern India. Furthermore, more interest is needed on how planning is being performed which includes how land use is being allocated to effective mitigation measures. Moving forward, it is crucial to prioritise sustainable planning and foster consensus among stakeholders to ensure a harmonious balance between urban growth and environmental preservation in Northeastern India.

Zoo officials rescued a leopard from a dry well after it was tranquilised in a residential area of Guwahati in 2017. PIC CREDITS by Author

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