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Innovative Urban Design Strategy for Transforming Cities

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Abstract

As incubators of innovation, towns and cities have always played a key role in bringing about change and creating surprises. From the Renaissance and Industrial Revolution to the classical Greek and Roman civilizations, comparable occurrences took place in the ancient civilizations of Mesopotamia, the Nile, and the Indus Valley. Cities and towns serve as catalysts for the region's industrialization and modernization as well as for changes in people's lifestyles. In light of the most recent ideas in urban development, the paper supports the importance and necessity of using creative methods in the creation and execution of public policies pertaining to urban renewal. The provisions of each of the selected concepts are analysed in order to present the pertinent ideas for the innovation policy of revitalizing cities. It is concluded that there isn't a single city that has only adopted one of the most recent ideas for urban development. In actuality, we witness the multi-vectorality and amalgamation of urban strategies that eventually supplanted conventional sectoral perspectives. Transforming dilapidated neighborhoods into urban settings that support human life and activities in accordance with the requirements and preferences of their residents is the aim of innovative methods to urban rehabilitation strategy. Both the long-term synergistic impacts on the city as a whole and the impact on a particular degraded area should be taken into account when considering revitalization. It was discovered that human-oriented programs of sustainable area redevelopment lay the groundwork for creative urban revitalization initiatives. The programs are predicated on considering a range of ideas and integrating several activities, particularly: establishment of a small, multipurpose space.

Keywords

Urban revitalization, Sustainable development, Compact city, Long-term synergistic, Sustainable area.

1. Introduction

For the residents of the surrounding villages, the cities provide a range of opportunities for social, cultural, and economic progress. The need for constructed residential and non-residential spaces, public transportation and other services, municipal infrastructure, etc., is increased by the expanding non-agricultural population, the increasing non-agricultural earnings of urban dwellers, and economic expansion in the form of industrial development. These places' improved living conditions and urban land use efficiency serve as catalysts for urban growth and development (Sánchez-Sepúlveda et al. 2018). It has been noted that the transportation networks extending from a sizable urban core encircled by a scattered urban-rural perimeter are primarily responsible for the urban expansion of India's megacities to handle the extreme population pressure. Inadequate transportation, sanitation, and other services and facilities; haphazard land use; traffic congestion; dirty, poor, or outdated housing; and the sociological correlates of urban decay, like crime, are all addressed by urban renewal, a comprehensive approach. Early initiatives often concentrated on housing reform and sanitary and public health measures. Later, there was an increasing focus on clearing slums and moving people and businesses from dense regions to less crowded areas, as seen in the British garden-city and new-towns movements (Newton, 2013). Late 20th-century criticisms of urban sprawl prompted new interest in the efficiencies of urban centralization. Strong urban design strategies provide significant city level benefits, better quality of life, safer and more secure environment and a greater ability to function as an urban entity. Additionally, it gives each city a distinct character and creates the foundation for it to adapt better to varying social, economic, and climatic factors. Urban design is inclusive in attaining results that holistically deliver better built environments and, consequently, better ways of living, regardless of the size of a city or project. Some of the ideas and tactics utilized for urban growth, redevelopment, and conservation projects are mentioned below (Culpa et al. 2021). These are tactics that go beyond the unique characteristics of every city and serve as a general manual for improving the standard of living in cities. A manual that helps people who are designing and utilizing these initiatives in urban settings comprehend them in a more straightforward manner with thoughtful and practical reasoning (Mandeli, 2019). Thus, the article's goal is to support methods for developing and implementing public policies related to urban regeneration that are grounded in the most recent ideas in urban development and the framework requirements for their execution (Azoury et al. 2024; Marathe et a. 2015).

2. Review of Literature

The policies and practices of urban regeneration were impacted by the increased focus on sustainability. The idea of a sustainable revival of cities was developed as a result of the search for innovative ways to restore deteriorated urban areas in a sustainable manner. After all, it is erroneous to believe that one may prioritize achieving immediate results over balancing economic, social, and environmental concerns when rebuilding a city. Consequently, the idea of urban rejuvenation has emerged as the primary force behind the sustainable growth of cities (Capolongo et al. 2018).

The development of local and regional legislative tools, as well as the establishment of multi-sector and interdepartmental partnerships, are all essential components of a successful city regeneration strategy. To achieve the intended results and guarantee the long-term sustainability of revitalization programs, the key players must be included in the creation and implementation of a relevant policy (Akotia, Opoku, 2018). The interests of all parties involved in urban redevelopment must be balanced if the developed measures are to increase in capability. While communal vision, mediation, and the development of community competencies can become urgent drivers of a sustainable revival of metropolitan areas, this also applies to social learning processes and sustainability foresight, among other components of systematic thinking (Cinderby et al. 2021).

In addition, there are many perspectives and methods of sustainable urban development concerning contemporary climate change adaptation. In this regard, it is important to note a scientific investigation of D. Tubridy 2021, who considers the relationship

between urban revitalization and the development of green economy. When creating a strategic vision for urban development and the potential future function of degraded areas, these and other scientific findings suggest that the tools of the urban revitalization program need to be improved (Chaname-Chira et al. 2024; Sanchez-Sepulveda et al. 2019).

3. Material and Methods

The need for change in domestic architecture is present in rural communities for a number of reasons, including shifting sociocultural characteristics, professional diversity, material and technical preferences, and—above all—new goals and evolving lifestyles (Insch, 2014). The Different Parameters to be Urban shown in Figure 1.

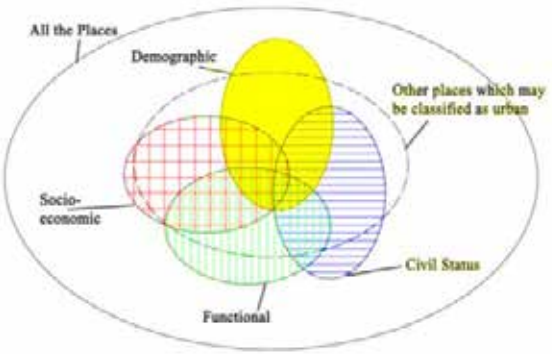

Figure 1. The Different Parameters to be Urban

3.1. Improve Streets as Places

The foundation of placemaking is the straightforward idea that if cities are designed with vehicles and traffic in mind, then cars and traffic will exist. People and locations are what you will get if you plan for them. Growth does not always translate into more traffic and more capacity on the roads. We can make a variety of decisions, beginning with the choice to make our streets welcoming and secure for all users, including automobiles, cyclists, and pedestrians.

One excellent example of a transit system that improves street life and fosters social cohesiveness is the Metro cable in Medellín, Colombia. The neighborhoods on the city's hillsides, which were once among Medellín's most gang-infested and crime-ridden districts, are served by the aerial tram system. Once requiring a strenuous trek up and down hundreds of steps or a drawn-out minibus ride, residents of the historically neglected villages now have easy access to the city's major subway system.

In our prevailing rhetoric, classifying the vernacular as a heritage asset with little room for change, adaptation, or even replacement does not assist confront such realities. The emergence of new building styles and construction techniques in rural areas is another factor contributing to the tendency for change in the current vernacular. The character of building production in formerly undeveloped areas has changed with unprecedented dynamism and speed due to this relatively recent growth scenario, which has repercussions for the communal organization and content of rural habitations in these places shown in Figure 2.

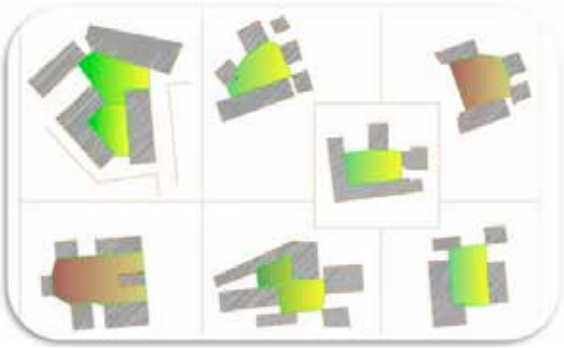

Figure 2. Shapes of Public Spaces as Carved Out of Randomly Placed Enclosing Buildings

3.2. Establish Parks and Squares as Multipurpose Locations

As a safety valve for the city, a lovely urban park gives residents of highly populated areas a place to breathe. However, a poorly designed or managed park can be a dangerous and frightening area, which deters people, businesses, and investment. Conversely, a magnificent plaza can foster civic pride and strengthen ties between the populace and their political and cultural institutions. Despite being surrounded by Santiago's Las Condes plazas, commercial galleries, and one of the city's largest train and bus terminals. Urban Development co-founders Marcello Corbo and Rodrigo Jullian see this prime location as a significant opportunity for their business

and the city. They started an incredibly cooperative endeavour to rejuvenate shops by enhancing the public area.

3.3. Create Local Market-Based Economies

In many cities across the world, an unofficial public markets economy flourishes, but it frequently operates in a disorderly manner, cluttering streets, unfairly competing with nearby companies, and denying vulnerable communities the chance to advance in society. However, markets can offer a framework of regulations and structure that promotes the expansion of small enterprises, ensures the safety of food, and makes a place more appealing to consumers.

All that has changed with a redesign. The market is one of the main initiatives of the local municipality's all-encompassing strategy for enhancing the area's infrastructure. After interviewing the traders to learn about their needs and desires, government employees converted vacant space in the market's surrounding area into enclosed vendor booths and secured storage areas. Widening pedestrian pathways has made it simpler for customers to move about. Sanitary cooking facilities are now available to the merchants that prepare bovine heads. All of these changes, which were suggested by the very people who would use them, have led to a boom in the economy, a safer environment, and a sharp rise in job and entrepreneurial prospects.

3.4. Design Buildings to Support Places

New construction is occurring at a never-before-seen rate in several cities. Tall skyscrapers are displacing traditional neighbourhoods, and public buildings like libraries and schools frequently take on the appearance of fortresses. This pattern has proliferated globally and is causing harm to the urban fabric everywhere.

Council House 2, however, is not merely a showpiece "green" structure. Because of its dynamic ground-level link to the neighborhood, it fosters street activity and a strong feeling of place. The inclusion of shade structures and other amenities makes the area around the building more welcoming and an important component of the neighborhood. It demonstrates that "iconic" architecture does not have to be apart from the urban fabric; rather, it may coexist with the locals and their surroundings in a continuous dialogue.

3.5. Connect an Agenda for Public Space with an Agenda for Public Health

Access to essential services like sewage treatment, clean water, and sanitation is a sign of a healthy city. Additionally, it is a place where everyone can access nutritious food, where women and children can stroll fearlessly, and where people can comfortably and safely enjoy parks, squares, and other public areas.

The past few decades have seen a sharp rise in urbanization as a result of globalization and greater prospects. Urban space is crucial to the state of the environment today, which has a direct impact on people's attitudes and behaviors. Local thermal conditions worsen as a result of the urban population's increased energy demands. On the other hand, per capita energy usage is lower in metropolitan regions. Urbanization and local climate patterns have a variety of effects on city weather and energy use (Andreani et al. 2019). As surface irregularities and building variety grow, so may the quantity of heat trapped within an urban block. The increase in coarseness that is linked to the urbanization process has an impact on the thermal comfort level in urban blocks. While fluid-based cooling systems are integrated to meet the increasing demand due to changes in microclimatic conditions, air is the most widely used cooling mediator shown in Figure 3 (Insch, 2014; Inam, 2013).

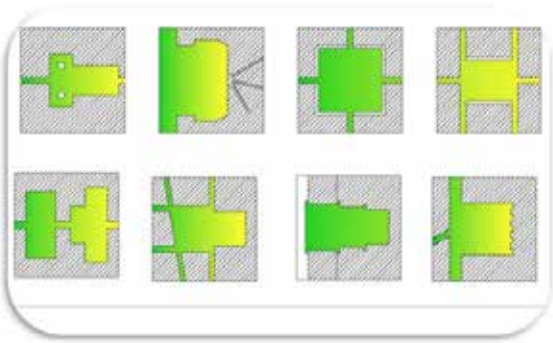

Figure 3. Forms of Public Spaces as Created by Buildings Adjoining It

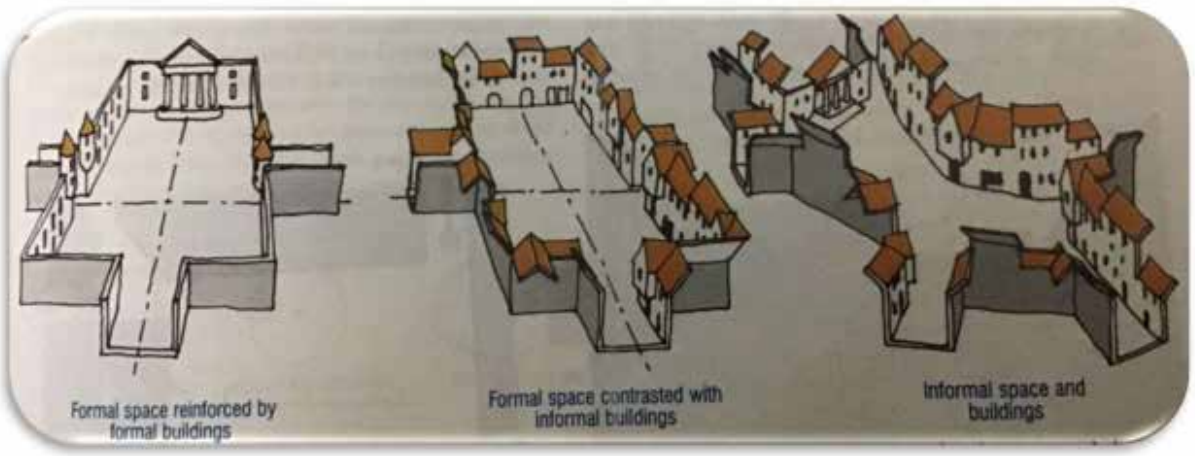

Figure 4. Formal and Informal Spaces Created by Building

There are numerous fundamental necessities in the Central Detroit neighbourhood. Many locals are unemployed. Many are carless. Furthermore, the public transit system is completely inadequate. Among the primary issues are security and safety. The city is able to continue without even repairing malfunctioning lighting. Numerous houses are squatter-occupied and abandoned shown in Figure 4.

3.6. Reinvent Community Planning

The Kounkuey Design Initiative (KDI) works with locals to create low-cost, high-impact built environments that improve their quality of life, transforming impoverished communities via innovative global collaboration. According to KDI, sustainable development requires participatory planning and design. An outstanding example of how place makers can take people' ideas, enhance them with technological know-how and creative design, and empower communities to advocate for themselves is a Public Space Project they began in Nairobi, Kenya, in 2011 (Wong et al. 2020).

3.7. Utilize the Power of 10+

What if there were ten such places in a neighbourhood? After then, the region would reach a critical mass, which would include a number of locations where locals and visitors could spend days at a time fully immersed in city life. Going a step further, what if a city had ten of these neighbourhoods? Every citizen would then be able to walk to their homes and enjoy excellent public areas. We should set that kind of goal for all cities if we are serious about enhancing and revitalizing urban life.

Among the facilities already in place in Kibera are a primary school, a public lavatory, a community garden, a playground, a river, a pottery workshop, a meeting hall, and a resource canter. PPS recently had an on-site meeting with City Council employees and citizens to talk about ideas to make the neighbourhood safer and more appealing to the community. The focus changed from the sports field to how to maximize all of its resources in order to transform Silanga Sports Field into a true neighbourhood destination with positive ripple effects. Here, the Power of 10 is at work.

3.8. Establish a thorough Agenda for Public Spaces

Developing a citywide plan begins with a candid assessment of the state of the public spaces as they stand. Communities should pay attention to a playground that is often neglected, such a dilapidated park or an empty plaza. Residents and other significant stakeholders should participate in the assessment, which should cover every neighbourhood shown in Figure 5 (Nhamo et al. 2021).

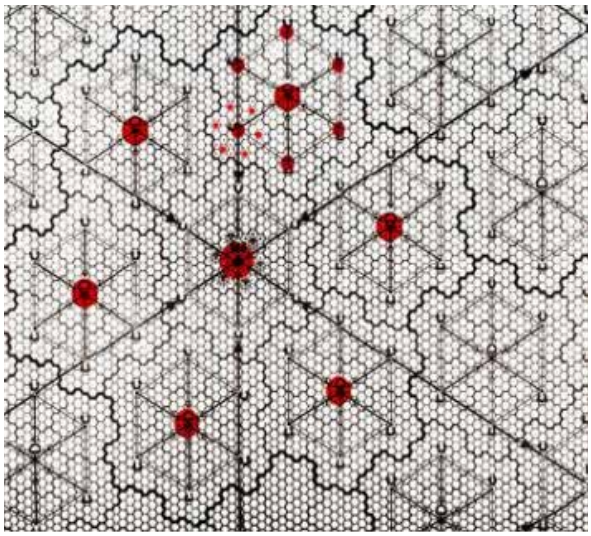

Figure 5. Schematic Pattern of Regional Distribution of Settlements

3.9. Reorganize the Government to Encourage Public Areas

Regretfully, public spaces and placemaking are not typically supported by the government. In actuality, great public places are occasionally hampered by the way departments are organized and the procedures they demand. In order to achieve this, consensus-building, municipal consultative procedures, and institutional reform must be developed. These measures all improve inclusion and citizenship. In cities where Placemaking has gained traction, neighbourhood alliances, business improvement districts, and community development organizations are often the ones driving community transformation rather than the local government, which is frequently not directly involved in implementation, for instance.

4. Innovative Solutions and Integrated Urban Planning on the Ground

For arriving at the attributes of public spaces and their measurable parameters a two-stage system was adopted. In the first stage all the statements, quotes mentioned in literature on public spaces were listed. These statements are comments by different authors on their understanding of public space with specific reference to their experience about the consistency and recognition of popular public spaces. Every quotation or phrase makes a statement about the nature, importance, and necessity of public areas in a city. Each statement was coded for its meaning as a parameter of an aspect of a public space. The statements each of these were grouped under different attributes of public spaces (Psathopoulou et al. 2024). In the next stage all the coding were placed under common attributes and the measurable parameters of these were defined. The list of parameters under each attribute were validated to prepare an exhaustive list of probable measurable parameters. During the course of developing the measurable parameters of attributes that are essential to gauge the quality of any public space, a multi researcher system was adopted. At the beginning an exhaustive list of statements and quotes on public spaces was drawn from literature studies and were elaborately discussed. Every statement was deliberated upon with a group of researchers and academicians for definitions and meaning, and how each is relevant to the recognition of any public space. Coding of each statement was carefully done after discussion on their closeness to any define attribute, for its stability and its contribution in determining the fate of a determining the fate of a public space. Other researchers were brought in to edit, eliminate, merge or add a new parameter to make the list more robust and meaningful. There were some sixty such parameter to begin with that were considered to know level of quality a such public space would offer. Finally, after the long deliberations forty-four measurable parameters under eleven attributes were taken forward for the purpose of evaluation shown in Figure 6.

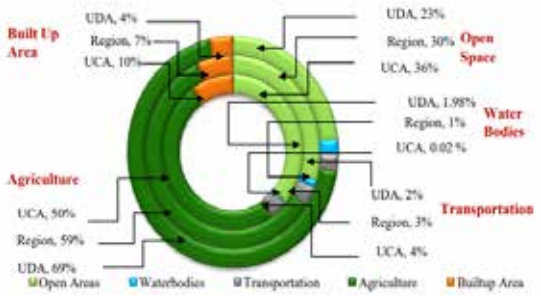

Figure 6. Classification of Land Cover in the Metropolitan Area

The attributes that have been consistently mentioned in literature studies as necessary dimensions of any public space are elaborated for ways by which parameters within them can be identified and measured. In how many ways the attribute comfort, for example, can be measured. Again, with the help of the established parameters in the literature, several more parameters were deliberated upon. Similarly, the number of aspects that can help assess safety were again deliberated upon. Subsequently all the other attributes drawn from the literature namely, weather protection, accessibility, familiarity, engagement, activities, Transformation and maintenance, environment, form and legibility, were considered for their measurable. The number of ways by which each attribute can be gauged is worked out for rating. The weights assigned to each parameter is the rating that each such parameter attains based on the level of satisfaction it possesses in the evaluated public space shown in Figure 7 (Drilling et al. 2025).

Following the macro-level studies, the micro-level impact of urbanization on urban villages has been investigated. From the study area, eight representative sample urban villages have been chosen. In these eight urban villages, changes in the built environment, activity patterns, landscape ecology, socioeconomic situation, etc. have all been studied. To gather information on the socioeconomic standing of certain urban settlements, the “household questionnaire survey technique” was employed. When necessary, focus group discussions (FGD) and interviews have also been employed (Letaifa, 2015; Schreiber et al. 2023). By evaluating the variance in built form in a few chosen urban villages, the coherence of the built form character of these communities with the surrounding development has also been investigated. The Jaipur Metropolitan Area’s (JMA) spatial development has been evaluated using satellite imagery.

We have used Arc GIS 10 to create thematic maps with ‘patches’ based on land use and land cover classification. “Patches” were created by applying the “maximum likelihood” technique. The layer staging, picture categorization, subset, and mosaicking have all been completed using ERDAS Imagine 11.

Figure 7. Development Index

Building footprints have been mapped using the built-to-open ratio spatial analysis, which also shows the related changes in land cover and land use. The growth patterns of the many urban communities in the area have been recorded using the “landscape ecology method.” Additionally, one urban village’s architectural environment—both traditional and newly constructed—has been contrasted with others.

5. Conclusion

Urban influence and changes in urban form in urban villages have been compared using the urban built environment and distance from the urban center or from urban roadways radiating from the urban center, as hypothesized. Apparently, ingredients of a public space do not get a wide attention from the designers while designing a public space. A simple enclosed area surrounded by structures meant for social interaction cannot guarantee people's congregation for the purpose how well designed it may be unless it incorporates all the parameters while designing it a public space. It may draw in people of specific group, age for some time, but may not be attractive enough to give a high level of engagement among the visitors. The findings suggest that a wide spectrum of attributes need to be covered for addressing the ways and means of ensuring the success of any designed public space. Out of the probable 44 parameters put under eleven attributes are the contributors to the successful functioning of any public space. All these 38 parameters are capable of thrusting a high level of engagement for the visitors when within this deliberately designed public space.

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