

FROM ELEGANCE TO EYESORE: INVESTIGATING THE NEED FOR EFFECTIVE WASTE COLLECTION POINTS AND REVITALIZING URBAN VOIDS

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Abstract

In recent years, under the norms of Swachh Bharat Abhiyan, the municipal corporation took an initiative at the policy level for removal of dustbins from every cross roads (Chaurah) in correspondence to any colony in order to preserve the unhindered originality of the streetscape. Not only architects, social scientists too have researched behavioral aspects related to spaces or areas and have worked a lot and have discussed extensively on this topic; justifying the ways to influence human behaviors associated with a given space. Various social experiments will be accessed for social changes. A study was conducted to delve into how social scientists of other countries have worked to assign the collection points in the urban fabric. Case studies were conducted in various other cities on the urban design strategies and techniques which includes the pre-existing collection points that were scattered (unplanned) to be replaced with landscaping and architectural elements (graffiti, sit outs, etc...), giving way for a scope to have designated **collection points** in every colony rather than the conventional streetside pick-up points. The issue of littering persists thereby establishing a connection between sporadic waste disposal in undesignated areas and urban blight. The problem persists with the collection points and not with the people; Thus, a slight alteration in the positioning of collection points (a designated space) can be a possible solution to this issue.

Keywords: Collection points; Architectural elements; Street littering; Urban blight; Urban fabric; Urban Voids

1 Introduction

The urban fabric of modernity testifies the progression in human behavior. Townships with their dynamic skylines, rich aroma of culture, lively streets have forever been known for being the epitomes of human civilization. Per contra, there persists a problem, a problem that is quite forlorn. Beneath the expanse of the urban splendor, there lies a grave problem, a problem of litter-strewn streets that pose a downgrade to the

natural aesthetics of the city. Witnessing this aspect, the municipal corporation took an initiative, under the norms of Swachh Bharat Abhiyan, to remove dustbins from every cross road in correspondence to any colony in order to preserve the unhindered originality of the streetscape. Yet the unsettling reality persists, people still find ways to create eyesore by undermining the very essence of the city. This lackadaisical approach raises critical questions including the reasons for disregarding abundance of waste receptacles and make

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the urban environment lose its charm. In spite of the availability of municipal dustbins, streetscapes still face multifaceted challenges of street littering in urban settings. Around 40% of the total waste produced in our country remains uncollected and is littered around the streets. This research delves into reshaping the urban fabric with installations; may it be sustainable public art or aesthetically pleasing elements of architecture including hardscape landscaping elements which hold the potential to transform neglected urban spaces into vivacious, spotless and artistically appealing landscape elements. This paper aims to throw light on the causes of littering the streetscapes, challenges imposed by the existing norms and gives a direction towards a holistic approach of effective waste management with designated collection points and installations that directs community engagement to enhance the urban aesthetics, thereby fostering a sustainable living for all.

2 Literature Review

The issue of littering the urban fabric, sustains as a major concern. Despite the coherent measures being taken by the authorities, the urban voids tend to be the major attraction points for streetside waste disposal. Strategies have forever been experimented to mitigate this issue, dating back to the times of Indus valley civilisation, few Chinese settlements and in medieval India, case studies have shown the use of proper channels and waste management strategies that proved to be epitomes of urban planning that somehow posed potential interventions in the contextuality of municipal waste management strategies.

According to Chris van den Heuvel, litter-strewn streets are one of the primary sources of adversities that have a negative impact on the environment, human health and the perceived safety associated with it. The litter has somehow become the major contributor of the ‘plastic soup’ which currently is considered as one amongst the major global concerns. Even the smallest glimpse to areas such as those can lead to a grievance in the mindsets of individuals, linking the change of psychological aspect of a human’s perception with visualization. The feeling of deceitfulness arises with the changing fabric of urbanity, which can somewhat be considered as worrisome. Making the streets safe to use can and will enhance the quality of life, which has always been the most vital element in the

needs of humanity. This brings in the vastness in architecture and design. Elements of cultural significance, landscaping, planning the unplanned voids to create sustainably aesthetic masterpieces can help in making this happen. Thus, giving rise to solutions like – Nudging, priming and messaging that resembles making people aware of the wholeness of a city, incorporating sustainable public art and elements of architecture that showcase the cultural value associated with the city and lastly, building a strong network of people who take lead on conserving this culture. (Heuvel 2019)

As proposed by Seog Jeong Lee et al it has been found that, the spaces that are unused and not properly maintained include the spaces that fall between the public and private nodes of a city. As per their research, these urban voids in residential environments pose as dumping grounds of waste and other refuse materials. Furthermore, it categorizes residential areas into three major zones including street, blocks and edge conditions. Quite a times, the undesirable urban areas which have faced years of neglect, do create certainties that more or less make the area lose coherent connection with the existing elements surrounding it. This in turn makes spaces, the urban voids, to fall under the category of lost spaces. Newer trends that follow the creation of huge landscaped open areas in close proximity to newer projects that fewer people use (more area less density) coined in the current trend as ‘desert in the urban fabric’. These voids pose as places with strategic significance that make it domineering to understand the intrinsic hitches associated with it. His study posed a guideline that showcases how lack of policies in implementation can create a massive unplanned yet planned wasteland which can be revitalized with architectural elements. (Seog Jeong Lee 2015)

As per the study conducted by Reeman Mohammed Rehan, it has been found that there has been an essential rise in the incorporation of sustainable public art which accounts for creative solutions to revitalize the voids and the streetside to rejuvenate from its past abuse. In addition to that, the study also delved into how people actually

react to architectural elements which do have a visual value associated with it. An experiment was conducted which showed that people do tend to associate themselves with architecture and at certain times, they do get influenced as per the condition of the given space. Art installation, architectural elements, scriptures, graphics, etc... add a sense of aesthetics to a particular space. This element of aesthetics helps in imposing a characteristic value to the space which in turn creates the emotion of affinity within the space and its user. Even a symbol changes how people react to a particular place. A study has proved that use of certain religious symbols drastically reduced the probability of street littering within a close proximity, siding with the point that even the factor i.e., the fear of God. It makes people do things that they usually prefer not to. This study shows that scriptures, art forms and certain symbols have a huge impact on the psychology of people. (Rehan 2019)

As was found in the study conducted by Donald J. Patterson, blind spots are the primary reason for people to litter. A loop-hole forms a niche at certain urban voids, which act as the source for the people to dispose of waste and paint the urban fabric in a dull monotony. As per his research, this can be minimized by implementing interactive elements to the design i.e., making those blind spots playfully rich and alluring, which in turn might make people deviate from littering and promote healthier processes. Dynamic spaces call for intricate designs that are responsible for an effective impact on the behaviors of its residents. The presence of these spots poses a psychological factor that contributes to street littering. As per the study, insufficient lighting too poses as one of the factors which create niches that are conducive to these illegitimate practices. Certain proposals that stand as the solution to this problem include the inclusivity in urban design i.e., orienting architectural features, landscaping and incorporation of transparent materials alongside the removal of physical barriers can contribute to a more observable ambience with a factor of openness in the spaces. (Patterson 2009)

Interactivity, a way in which intersections between people and spaces acts as the medium to define how well maintained a space can be. In recent years, due to the lack of connection between the people and the places they reside in. A space is always a definitive identity of any individual or a group and interaction is always the key, as it says a lot about how well the people residing nearby can or are willing to maintain the spaces in near to original form. The slightest neglect results in accumulation of various adversities that surely harm the natural essence of the spaces, the streetside to be specific. The increase in demographics makes it inevitable for people of diverse cultures to think in the same way. Which solely is responsible for minor outbursts amongst individuals that quiet a time result in varied alternatives and making it a vulnerable situation for segregation in various aspects including waste disposal. The more an individual delves into the field of characteristic behavior associated with a space, the more they find themselves at the surface as stated by Ryan Bengtsson in his paper, Re-negotiating social space: Public art installation and interactive experience. (Bengtsson 2012)

It was found that the use of IoT based architecture i.e., Internet of Things, efficient waste collection can be achieved with two primary elements; one, the volume of waste in a particular collection point by examining the bin's holding capacity and its surroundings. Lastly, by using the data to enroute collection vehicles to the particular collection points. These points will be situated at every cross road, orienting the habits of people; from being reckless and disposing wastes on streetside and diminishing the aura of urban voids to being directed to use electronic bins and collection points to rejuvenate the lost beauty of the streetside that once defined the beauty of the city. The IoT enabled collection points have sensors that detect obstacles around that particular collection point and also keeps track of illicit waste disposal in a close proximity, thus making the unsung stretches a part of the urban fabric. This research opens protocols for providing optimal solutions for proper waste disposal and

preservation of culture even in the tiniest niche of a city. The case studies and propositions were given by a team of researchers headed by Sam Aleyadeh. (Aleyadeh 2018)

3 Methodology

From elegance to eyesore, delves into the ways of effectively assigning collection points to avoid street littering and gives in the concept of revitalizing urban voids to rekindle the lost charm. This study gives in ideas to be foretold as a paper that accounts for the cause and effect. Urban voids i.e., the niches in the urban fabric that are left abandoned with no trace of construction, have become one of the main concerns as they are carelessly treated by the individuals for being used as reckless waste disposal points. Certain by-folds too add to the creation of blind spots that are responsible for a psychological trigger in the mindsets of people to use those planned wastelands as disposal points. A survey was conducted in the Chandini chowk street, nearing in proximity to Swaraj Ashram and parts of a stretch near the regional transport office and high court square in Cuttack which holds a quite significant value in the history of the city. The demographic output towards the newer policies imposed by the government showed that just by organizing sets of collection points

at farfetched places to avoid littering, as a solution has in turn aggravated the existing problem. So, the idea of assigning IoT enabled collection points at smaller intervals can help minimize the abuse of street sides, furthermore revitalizing the urban voids can rejuvenate the rustic charm associated with the urban fabric.

4 Analysis

Mostly underutilized, the urban voids tend to be a part of intricate components of the urban fabric which in turn holds an immense potential for being revitalized. This analysis delves into various factors that shape the revitalisation including spatial, proximal and accessibility as the parameters. Jaydurga Nagar, an area under zone:17 of Laxmisagar (Mouza) in the Comprehensive Development Plan of Bhubaneswar, was chosen as a stretch for analysis. Consisting of numerous cross roads and a diverse population, it is devoid of complete planning, implying the presence of unplanned voids in between infrastructure and landscapes. Patches of lands were identified with spaces that were abused with waste disposal. A short survey was conducted for inquiring the existing plans of redevelopment, ownership and awareness of the actual owner regarding the problem associated with their plots. The analysed data:



Figure 1: The map of Jaydurga Nagar

A stretch with a running length of 2.077km within the proximity of 53 sq km area was physically surveyed for identifying the spaces that pose as a part of the unplanned within the planned. These urban voids were



Figure 2: The Analysed route with urban voids (2.077km)

battered with reckless garbage disposals and were arranged according to the expanse of area ranging from 1m to 6m of the littering radii.



Figure 3: The map of Jaydurga Nagar

The identified spaces were further segregated under public and private land ownership with an intention of redevelopment of the surveyed stretch. 83% i.e., 15



Figure 4: The Analysed route with urban voids (2.077km)

of 18 urban voids were found to be under the possession of a single individual, leaving 17% of those voids i.e., 3 in number to be under the governmental jurisdiction.



Figure 5: The map of Jaydurga Nagar



Figure 6: The Analysed route with urban voids (2.077km)



Figure 7: The map of Jaydurga Nagar



Figure 8: The Analysed route with urban voids (2.077km)

It was observed that it is quite often that the urban voids are formed due to the discarded private spaces that are left undeveloped and ill maintained which in turn calls for the increase in awareness amongst the residents of a particular area or the people in a city. This imposes a parameter of inclusion of the system of financial penalty to the individuals who leave their properties unattended which leads to street littering and unwanted waste disposals. Furthermore,



Figure 9: The map of Jaydurga Nagar

Regardless of the extremities, cities like Indore (a city in Madhya Pradesh, India), even with a population way more than the surveyed city, there is a strict enactment of policies that control the illicit street littering; when a person disposes their refuse upon the roads, the authority in charge, find the vendor who sold the product and make them pay for the doings of the user, building a sense of consent amongst the vendors to regularize proper disposal of refuse to avoid penalty. Mechanisms such as financial penalty works just fine to make people cautious of everything they do; which in turn proves that the monetary aspect in anyone's life has a greater impact than the proposed problem itself.

5 Conclusion

Summary:

Envisioning the future, it becomes a supposed

there arises another approach, the one that proposes a plan of redevelopment by taking a 1 year plan of revitalisation by signing a contract with the individual. On the other hand, the ones that are owned by the government, can be included under the policy of revitalizing the urban fabric with solutions that include IoT enabled collection points, inclusion of public art and sculptures incur a higher domain in terms of expected solutions as per the data.



Figure 10: The Analysed route with urban voids (2.077km)

cardinal for urban planners, policymakers and the stakeholders to visualize the potential of this proposed solution. The positive outcomes speak notably of the reduction in garbage disposal on streets. Investing in these strategies not only addresses immediate waste management but also tends to create cities with culturally vibrant urban fabric.

Recommendation:

The amalgamized solutions such as the IoT enabled collection points, sustainable public art, sculptures defined from our very culture and scrupulously designed landscape elements arose to be a part of a revolutionary tactic to mitigate the existence of litter strewn streets. This approach roots down to the understanding of human psychology that leads to a broader aspect of rejuvenating the urban fabric. The incorporation of all these techniques alongside the bitter face of financial penalty can foster a deep connection between the people and their places. There is an incli-

nation of the human mind to uphold cleanliness upon the visual perception of aesthetics being imbibed with their environment; when well-maintained. The reason being the infusion of a sense of pride and identity to the public spaces due to the introduction of culturally significant sculptures that enhances the whole narrative.

Scope of Future Research:

The avenues for further research might include adaptive strategies for planning, in depth studies on behavioral aspects that do address the underlying factors and developing a technological platform that can deal with the penal system for a particular community that checks on the waste disposal.

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