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Transforming Urban Precinct – An Urban Design Perspective of Asilmetta, Visakhapatnam

Kirti Chandra D
Guest Faculty, Department of Architecture, Andhra University College of Engineering (A.U.C.E), Visakhapatnam, Andhra Pradesh, India.

Abstract: ***The description of a city relies on the perception of an observer. Each person understands the environment in a different way and also has an own way of understanding the same. The way of understanding chosen by the observer leads him to different conclusions. Such conclusions from many observers in totality contribute to the understanding of the different elements and the character of an urban environment thereby providing an image about the city. Kevin Lynch, an American urban planner and author, has defined the concepts of an urban environment which are considered in understanding the image of a city. One of the potential junctions of the city of Visakhapatnam is the "Asilmetta Junction". Over the years, this junction and the surrounding arterial roads have been developed in response to the need of the people and the potential of the area. Such developments led to the construction of an overpass flyover that acts as an edge in the core of the city. The potential of the junction and its development has directly affected the surrounding areas in terms of growth, development, character, activities etc. This paper attempts to study the features of the area and its importance in an urban perspective, in terms of urban planning tools and concepts of Kevin Lynch.***

Keywords: Neighborhood, city, node, urban grain, landmark.

I. INTRODUCTION

A. *Description*

Visakhapatnam, also known as "The City of Destiny", is the largest city of the Indian State of Andhra Pradesh located amidst the Eastern Ghats and the coast of Bay of Bengal [1]. The city has witnessed development in the infrastructure from being a fishing village and a port city to a commercial city over the course of many years.

Figure 1

Figure 2

Figure 1 – Location of Andhra Pradesh in India [5]
Figure 2 – Location of Visakhapatnam city in the state of Andhra Pradesh [5]

1) *Demographics:* As per census 2011, Visakhapatnam is the 14th largest city the country with a population of 2,035,922 spread out within an area spanning around 681.96 km^2[1].Due to the recent trends in the development of IT hubs, the city has witnessed an immense scale of migration over the years thereby contributing to the population of the city. The increase in the population has led to the increase in the transportation flow within the city [2].
2) *The Need for Flyovers:* Approximately around 300000 vehicles are added in the past four years which has increased the traffic problems in major junctions of the city. Hence, there is a need for the construction of overpass flyovers at the potential junctions to ensure free and uninterrupted traffic flow [3].

B. Location

1) *Distance from Landmarks:* Asilmetta is a residential and commercial neighborhood in the city of Visakhapatnam located at a distance of 2.9km to the east of Visakhapatnam Railway station.

Figure 3 Figure 4

Figure 3 – Earmarked area of Visakhapatnam city [5]
Figure 4 – Overall map of Visakhapatnam city [5]

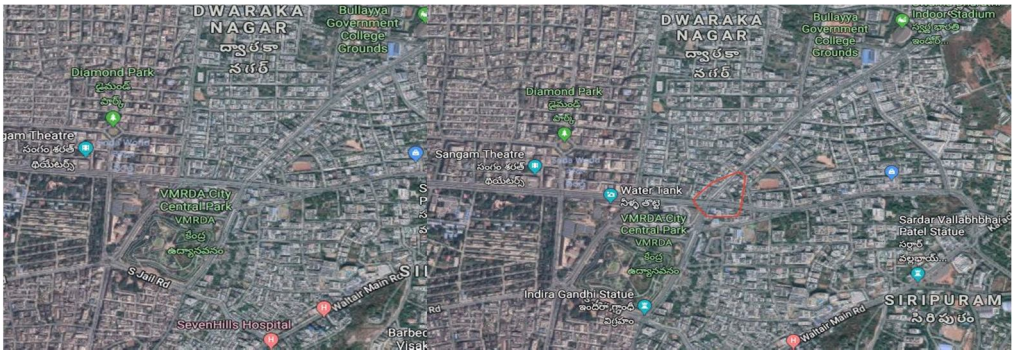

Figure 5 Figure 6

Figure 5 – Overall view of the Asilmetta area and its surroundings [5]
Figure 6 – The Asilmetta junction (earmarked circle) (Coordiantes = 17.7249° N, 83.3091° E)[5]

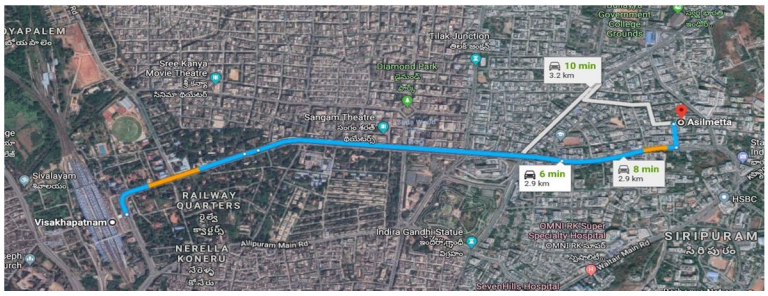

Figure 7 – Distance of the Asilmetta junction from the Visakhapatnam railway station [5]

2) *Importance:* Apart from the residential and commercial districts, the area also consists of a transportation centre which is one of the major bus terminals of the city, known as the "Dwaraka Bus Station". Due to the ease of transportation to the area, the neighborhood has attracted various training centers, institutions, service centers etc. As a result, a higher frequency of traffic flow and higher population density has been recorded in the vicinity of the area.
3) *Reason for the Flyover:* The Telugu talli flyover spans from the Visakhapatnam railway station to CBM Compound (area to the east of Asilmetta), providing a comfortable and faster transport way over various potential intersections along the edge. As a result, the highest traffic flow intersections are avoided on the way towards the railway station thereby ensuring an appropriate travel time. Hence, the location of the flyover has been chosen along the stretch of Asilmetta to Visakhapatnam railway station. It also helps in decongesting the junction which leads to the reduce of traffic density.
4) *Transformation:* From being the outskirts of the city, transportation centre, to a core commercial hub, the neighborhood has undergone immense transformation in infrastructure, facilities, neighborhood, housing layouts etc.

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II. CONCEPTS OF KEVIN LYNCH

A. *Introduction*

A city can be perceived in course of long span of time in terms of its physical infrastructure and moving elements [4]. The moving elements, which include people and their activities, help us understand the environment in relation to its surroundings. The perception of different observers contributes to the development of a mental image which can be used to interpret and guide information. Thus the urban planners attempt to study the elements in the environment through the mental images of various observers. These elements define the physical forms of the spaces thereby providing a character to the area or a city. The physical forms can be classified into paths, edges, districts, nodes and landmarks [4].

1. *Paths:* Paths can be defined as the channels along which the observer potentially moves [4]. For such observers the other environmental images are arranged based on the observations along their paths. They include streets, walkways, railroads, transit lines etc.
2. *Edges:* Edges can be defined as linear elements which create boundaries between two different areas or zones or phases leading to the break of continuity [4]. Hence, they act as organizing features of a city.
3. *Districts:* Districts are the sections or portions of a city which are identified by a common character [4].
4. *Nodes:* The highly potential focus spots in a city can be termed as a node [4]. The high potential of a node can be caused due to its physical character or a predominant activity in the spot. Sometimes a junction can also serve as a node due to its high importance.
5. *Landmarks:* External reference points which serve as clues of identification of a place on which a journey is relied are known as landmarks [4]. Landmarks may also be of historical importance which defines the area.

All the elements coexist in an area overlapping or penetrating one another leading to development of the imageability of the area [4].

III. THE STUDY

The area of study is of half a kilometer radius with the Asilmetta junction as the centre of the circle. The following elements are taken as the criteria for the study of the area in terms of urban design:

A. *Urban Grain and Land Use Land Cover*

A combination of urban mass and urban space can be termed as the urban grain of an area. Urban mass can be termed as the physical structures such as buildings whereas urban space can be defined as the open spaces located in an area. The following map [Figure 8] represents the proportion of building and open spaces within the area.

Figure 8

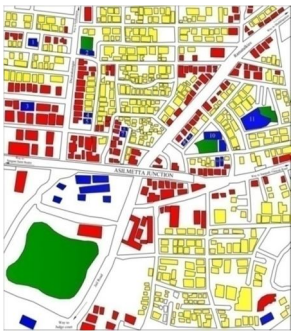

Figure 9

Figure 8: Urban Mass and Urban Space of the surroundings of Asilmetta Junction [5]
Figure 9: Land Use Land Cover details of the Asilmetta Junction and its surroundings [5]

TABLE I: URBAN GRAIN

Type of grain	Gradient	Denotion	Percent
Urban Mass	Black	Buildings	73.2%
Urban Space	White	Open spaces	26.8%

Land use land cover (figure 9) denotes the building footprints and their type of usage in an area. The gradient used to denote the different building types are as follows:

Table II: Gradients Of Building Types

S.No	Building type	Gradient	Percent (from Figure 9)
1	Residential	Yellow	48.7%
2	Commercial	Red	7.4%
3	Recreational	Green	8.2%
4	Institutional	Blue	35.7%

The availability of the all the required services in the proximity of the area led to the development of the neighborhood into a potential centre at the core of the city. The services include electronic service centers, schools, colleges, hospitals, public transportation center, interactive open spaces, parks, religious centers etc.

B. Map of Imageability

The image making elements of an area include nodes, landmarks, edges, paths, districts which are denoted as follows [Figures 10, 16, 27, 18, 32]:

1) Nodes: 8 major nodes have been identified within the area. The importance and the activities of the nodes are explained as follows:

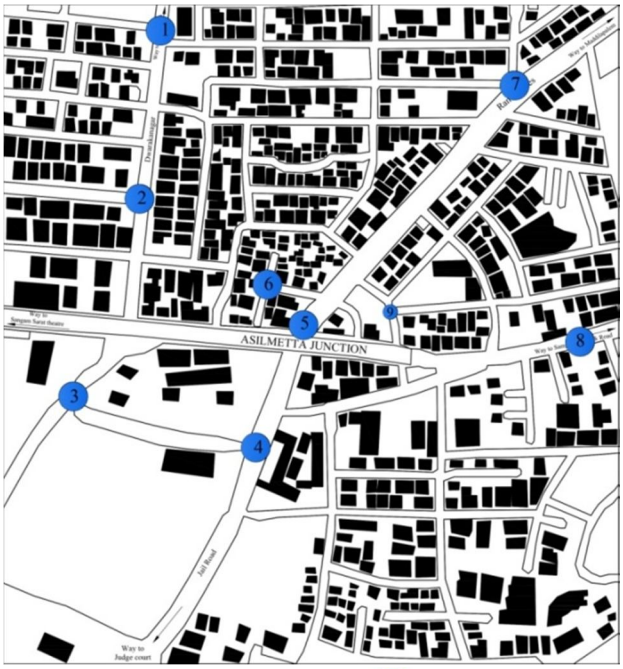

Figure 10: Map of Imageability – Nodes [5]

Figure 11 (a)

Figure 11 (b)

Figure 11 – Gurajada Statue Junction (a) North View [Node 2 (figure 10), survey location 3 (figure 28)] (b) South View [Node 3 (figure 10)]

The Gurajada statue junction (figure 11) connects directly to the National Highway – 16. Hence, all the major buses from the bus station, shared autos tend to accumulate at the junction making it a potential node. The working population and students who live in the outskirts of the city tend to gather at this junction to reach their destination via highway NH-16.


Figure 12(a)


Figure 12(b)

Figure 12 – Asilmetta Junction (a) South View [Node 4 (figure 10), Survey location 7 & 8 (figure 28)]
(b) North View [Node 5 (figure 10), Survey location 11 (figure 28)]

Asilmetta Junction [figure 12] is considered as one of the major nodes as it receives the traffic from all corners of the city directed towards the Dwaraka bus station. At the end of working hours and colleges a large crowd is gathered at this very junction as it serves as the first stop of transportation to reach any corner of the city. Every day at dusk, all the corporate intermediate students from the colleges located nearby reach the junction at once to reach their respective homes. Figure 13(a) shows a corporate college located at the dead of a street near the junction.


Figure 13(a)

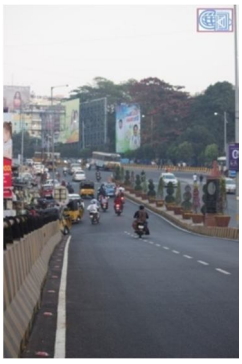
Figure 13(b)

Figure 13 (a) NRI Junior College near the Asilmetta junction [Node 6(figure 10)]
(b) The end of Telugu Talli Flyover towards Sampath Vinayak road [Node 8 (figure 10)].

The Telugu talli flyover [figure 13(b)] acts as a node that stretches from Visakhapatnam railway station junction to CBM compound. It receives a continuous traffic flow from the passengers of the railway station who opt to use the flyover to avoid major junctions. The Asilmetta junction traffic is also directed towards the node which leads to Sampath Vinayak temple road. Being an iconic religious centre, the temple attracts heavy traffic flow. It is also preceded by shopping malls, jeweler's shops which can be considered as a major commercial hub of the area.

Figure 14 – Timpany School (Asilmetta) affiliated to ICSE [Node 9 (figure 10), Landmark 4 (figure 16), Survey location 12 (figure 28)]

Timpany School (figure 14) is one of the famous schools in the city of Visakhapatnam, located in a secure residential district. the node experiences various student interaction activities, drop off activities etc. Most of the children within a radius of half a kilometer prefer to study in Timpany school due to its proximity in the area and its historical importance. Hence the school also serves as a neighborhood landmark

Figure 15 – Ramatalkies Junction [Node 7 (Figure 10), Junction 11 (Figure 16), Survey Location 13 (Figure 28)]

Ramatalkies junction (figure 15) is a highly potential node consisting of a corporate college nearby, a cinema theatre on one side, commercial complexes in the surrounding and travel transportation stops nearby. All the activities tend to overlap on a high frequency in a day.

2) Landmark, Edge, Junction

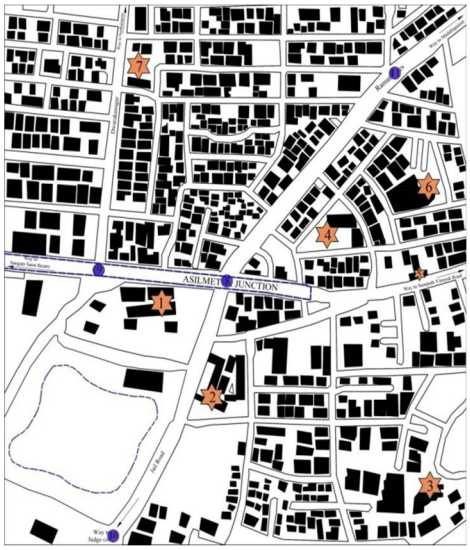

Figure 16: Landmarks, edges and junctions of the Asilmetta and the surrounding areas [5]

Landmarks [] tend to become a reference point at different levels of neighborhood which depends upon the potential and the importance of the structure. A few iconic structures like Taj Mahal, Charminar, Konark Sun Temple, Mysore Palace are the major landmarks across the world. Each city consists of such potential structures which tend to be iconic structures at different levels of neighborhood or at a city level. The Asilmetta area consists of landmarks at different levels which are discussed below:

Figure 17 – Dwaraka Bus Station Complex (RTC Complex) [Landmark 1 (figure 16), Survey location 9 (figure 28)]

Dwaraka Bus Station [figure 17] is a bus transport station that serves as a potential node of the neighborhood due to the continuous activities within the complex. Due to its different typology it acts as a landmark in the neighborhood level. The neighborhood consists of residential districts on its north while the remaining districts fall under the category of commercial, residential-commercial.

Figure 18 – Four Points Sheraton Hotel [Landmark 3 (figure 16)]

Four points, Sheraton [figure 18] serves as a landmark in the neighborhood area. The location of the hotel is in a residential district and hence it becomes a point of reference due to its different functionality and its visibility from any point around the neighborhood.

Figure 19 – Greater Visakhapatnam Municipal Corporation [Landmark 2 (figure 16)]

Greater Visakhapatnam Municipal Corporation [figure 19] is the governing body of the Visakhapatnam city located near the Dwaraka Bus station serves as a major landmark on a city level.

Figure 20 – Timpany Secondary School (CBM Compound) CBSE [Landmark 6(figure 16)]

Timpany Secondary School (CBM compound) [figure 20] is a CBSE affiliated secondary school located in the CBM compound. It serves as a neighborhood landmark. There are two branches of the school located in the same neighborhood providing different education syllabi in the neighborhood.

Figure 21 – Sampath Vinayak Temple [Landmark 5(figure 16)]

Sampath Vinayak Temple[figure 21] is one of the famous religious centers of the city, located to the west of Asilmetta junction. The name of the road is derived from the location of the temple. Hence it serves as landmark at a city level.

Edge [– – – – – – – (figure 16)] serves as a boundary between two major districts within the city.

Figure 22(a) Figure 22(b)

Figure 22 – Telugu Talli Flyover (a) start point (b) Over Gurajada Statue Junction

Telugu Talli Flyover [figure 22] creates an edge at the core of the city with its pathway due to which a partition is created between the residential districts towards the north and the institutional and commercial districts in the south. The flyover only enhances the movement of walkability over high traffic intersections.

Figure 23 – VMRDA Central Park

VMRDA Central Park [figure 23] is the recreational center of the neighborhood, consisting of open spaces, interaction spaces, walking tracks, cycling tracks, landscaping areas etc. Due to its large scale area, the park serves as an edge and as a result it divides the surrounding areas into 4 quadrants.

Junction [ ] (figure 16)] is an intersection point of the pathways of an area.

Figure 24

Figure 25

Figure 26

Figure 24 – Asilmetta Junction (West View) [Junction 8 (figure 16), Survey location 10 (figure 28)]
Figure 25 – Gurajada Statue Junction [Junction 9 (figure 16), Survey location 5 (figure 28)]
Figure 26 – Jail Road Junction [Junction 10 (figure 16)]

3) *District and Path*

Figure 27: The Districts and Pathways of the Asilmetta Junction and its surroundings [5]

The neighborhood consists of various types of districts as shown in figure 16. The Asilmetta junction road, Ramatalkies road and Jail road serve as the main roads thereby dividing the neighborhood into three main districts. These districts are further dividing into districts due to the minor pathways surrounding them. The overpass flyover can be termed as an additional pathway creating an edge underneath.

TABLE III: TABULAR FORM OF GRADIENTS FOR DISTRICTS

S.No	Gradient	District
1	Red	Commercial
2	Yellow	Residential
3	Red-yellow	Residential and commerical

C. Visual Survey

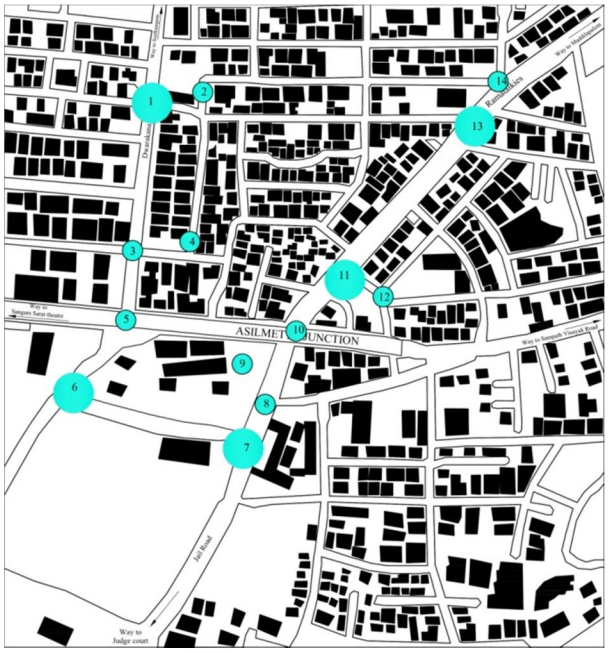

Figure 28: Visual Survey of the area [5]

The surveys of following locations have been explained in the previous sections as follows:

Table Iv: List Of Figures Showing The Locations For The Visual Survey

S.No	Location No(from figure 28)	Figure	Location Name
1	3	11(a)	Gurajada Statue Junction
2	5	25	Gurajada Statue Junction
3	7	12(a)	Asilmetta Junction
4	8	12(a)	Asilmetta Junction
5	9	17	Dwaraka Bus Station
6	10	24	Asilmetta Junction
7	11	12(b)	Asilmetta Junction
8	12	14	Timpany School (Asilmetta)
9	13	15	Ramatalkies Junction

Figure 29 – Vegetable Market [Survey location 2 (figure 28)]

The market (figure 29) is a center for the residential areas of Dwarakanagar, Srinagar. Early morning activities in this area are found to be more frequent.

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Figure 30 – Ramatalkies Theatre [Survey location 14 (figure 28)]

A cinema theatre (figure 30) located at a junction serves as a major entertainment center of the neighborhood area of Dwarakanagar, Srinagar, Ramatalkies. The theatre tends to attract population to the junction due to the craze for cinema.

Figure 31 – Gurajada Apparao Statue, VMRDA City [Survey location 6(figure 28)]

The junction (figure 31) serves as an additional entrance to the Dwaraka bus complex. It is also situated on the linear boulevard leading to the Governing body of Visakhapatam city.

D. Urban Issues

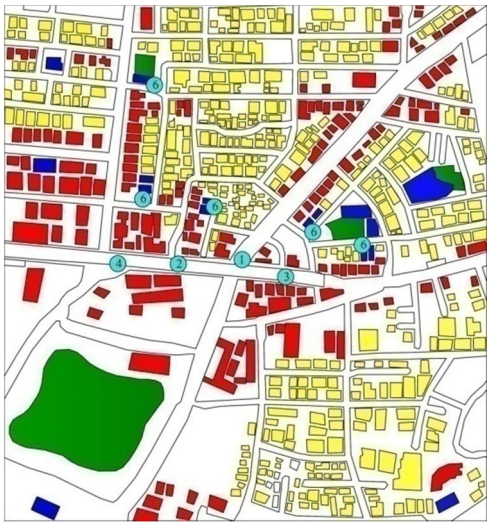

Figure 32: Locations where issues are identified around the Asilmetta Junction [5]

1) *Before Development (in 2013):* The infrastructure of the walkways, spaces, traffic lights, population flow, and traffic flow are the major issues of the junction. The spaces under the flyover were not in a proper condition due to which it attracted various informal livings. It also affected the hygiene of the stretch. The traffic lights were never in a proper condition even during the peak hours of the day. As a result it led to unmonitored, uncertain traffic and pedestrian movements in the junction. No proper walkways were built for a safe pedestrian flow. During the peak hours, a lot of students from the nearby corporate colleges [locations 6(figure 32)] reach the junction to reach their respective homes. The limited availability of area to accommodate a huge population flow, the lack of services to monitor the junction, the lack of force to control the junction causes the delay and traffic jams on a daily basis [6].

2) *After Development (2014 – Present):* After the impact of Hud-hud cyclone on 12th October 2014, the infrastructure of the city was severely damaged. Post the cyclone, the governing body has incorporated various measures to ensure the infrastructural restoration of the city. As a result, a tremendous change is witnessed in the facilities of the area. Due to the recent developments, smart city features were also incorporated in the city which includes 24x7 surveillance at every major nodes [figure 33(c)], underground electrical wiring systems, e-waste systems etc. Being one of major junctions of the city, Asilmetta has undergone a tremendous change in infrastructure thereby resolving many issues that were found before the onset of cyclone. Despite the proper services to monitor the traffic, the daily cause of trouble due to population flow from offices and corporate colleges at the peak hours remains unresolved. The following images (figure 33 to 35) show the change in the condition of the area due to development.


Figure 33 (a)


Figure 33(b)

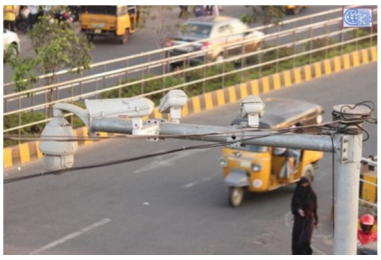
Figure 33(c)


Figure 33(d)


Figure 33(e)


Figure 33(f)


Figure 33(g)

Figure 33 – Asilmetta junction [Location 1 (figure 32)] (a) South view in 2013
(b) South view in 2019 (c) 24x7 surveillance at Asilmetta Junction
(d) North view in 2013 (e) North view in 2019 (f) Landscaping at the junction (g) Two way underpass below the junction


Figure 34(a)


Figure 34(b)


Figure 34(c)


Figure 34(d)

Figure 34 – Gurajada statue junction [Location 4 (figure 32)] (a) South view in 2013 (b) South view in 2019 (c) North view in 2013 (d) North view in 2019


Figure 35(a)


Figure 35(b)


Figure 35(c)


Figure 35(d)


Figure 35(e)


Figure 35(f)

Figure 35 – Asilmetta Junction [Location 3(figure 32)] (a) Unorganized parking in 2013 (b) Unorganized parking in 2019 (c) Flyover condition in 2013 (d) Flyover condition in 2019 (e) Greenery with railing (f) Pedestrian crossing walkways underneath the flyover

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IV. CONCLUSION

Asilmetta area and its surroundings had undergone progressive stages of development. An immense change is witnessed in the infrastructure of the spaces which was a result of development over a large period of time. The developmental growth rate was slow, yet it has achieved a quality result which was expected a few years ago. Yet the developments are only able to monitor the daily continuous public activities but unable to organize or control it in a disciplined manner [6]. Hence, these public issues are to be resolved in a more environment friendly manner which would ultimately increase the potential of the area over the years. Despite the transformation and the issues of the area, the imageability elements remain undisturbed.

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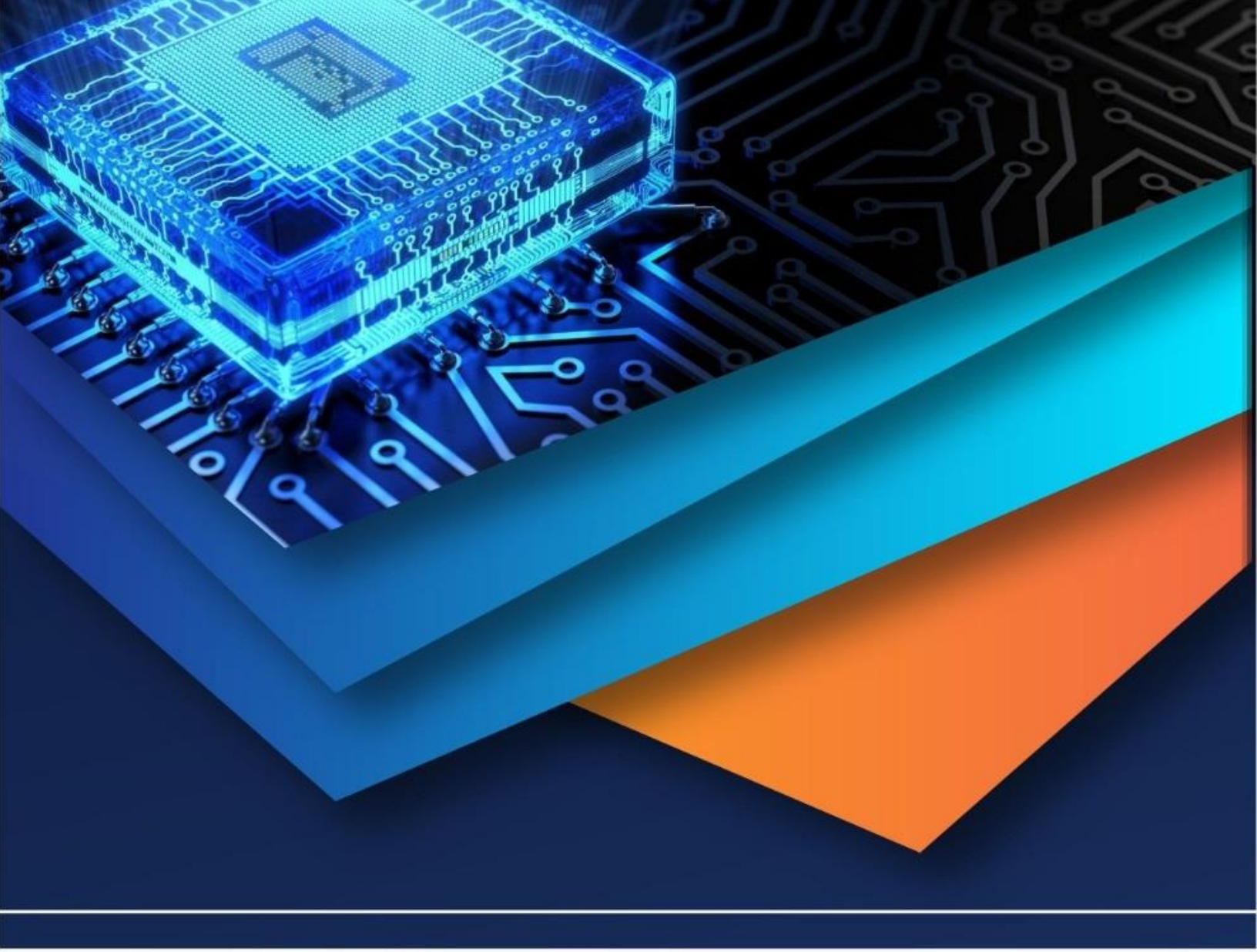

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