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ACCESSIBILITY TO PARKING REDESIGN OF RAILWAY STATION IN METROPOLITAN CITY

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ABSTRACT: *India is a creating nation. Urbanization in India is expanding quickly step by step. Quantities of individuals relocating from town to urban regions are expanding quickly to discover better openings for work and better way of life. As individuals are more pulled in urban zones for employments, transportation prerequisite for remote ranges from neighborhoods expanded. Individuals like to go by railroad as it is the safe, effectively open and less expensive. During peak hours and at local railway time the huge rush in platform to get in train which leads people use the stairs provided for the entry & exit of the passengers thus creating a huge conflict amongst them. Rules and regulation are also not properly obeyed. The finish of the venture will be the design plan of the overhauled of the different part of the railroad station so that the proficient development of group should be possible with it gauge and defense and establishment of check in counter at passageway and exit for security reason.*

Keyword: *Urbanization, pedestrian behavior's, expanding*

I. INTRODUCTION

II. Indian Railways (IR) claims and oversees one of the biggest Railway systems of the world with more than 64,000 Route Kilometers (Km) and 7,000 stations. Operations of the Indian Railways (IR) are administered by Ministry of Railways (MOR), Government of India and 16 Zonal Railways headed by General Managers. The Indian railways convey more than 17.5 million travelers consistently and a portion of the real Railway stations handle 100-200 million travelers for every annum. The majorities of the Railway stations have been worked more than 100 years prior, and have a restricted and again framework that handle a perpetually expanding number of travelers. The Railway stations are likewise situated amidst the urban communities and offer gigantic potential for re-advancement and business development Rail stations are a noteworthy component of the general trip involvement, and are basically the "face" of open transport. Ahmadabad is the largest city in the state of Gujarat. The city served as political as well as economical capital of the region since its establishment. Situated on the banks of river Sabarmati, Ahmadabad is located on the western side of India in the state of Gujarat. Ahmadabad city has witnessed the rule of different dynasties, right from Sultanate and Mughal rule to Maratha and British rule. Thus, the history of Ahmadabad, India is very rich. Ahmadabad was the former capital city of Gujarat. During the freedom struggle of India New traveler terminals are likewise being produced in urban communities where existing terminals can't take care without bounds demand. Not with standing strolling and holding up, travelers likewise much of the time buy and approve their tickets, purchase daily papers or nourishment from concessions, request data at stands, or stop to counsel maps. In this manner, travel station blockage can happen in strolling ranges, for example, stairways, lifts, additionally in holding up zones, for example, stages (particularly amid prepare loading up and landing times). For example, station doors and ways out, ticketing machines, entryways/toll entryways, Waiting lounges and concessions may likewise encounter clog and lining. It can't mirror the assortment of station arrangements that exist in underground rail stations, yet it indicates a surmised grouping of occasions that travelers may understand.

II. OBJECTIVES

- To analyzes the movement of passengers during different time of the day.
- To give appropriate fundamental recommendation like waiting lounge, staircase, parking, entry/exit point.
- To analyzes the movement of vehicles in parking and estimation of parking volume.
- To collection of data regarding passengers and infrastructure.
- Arranging and redesigning of basic infrastructure

III. SCOPE OF WORK

- Planning of lacking facilities at like staircase, waiting room, parking, entry & exit point etc.
- A study is limited constrained up to designing of station area.
- Collection data of passenger's peak hour and off peak hours.
- Re-planning & alternation of better three fundamental infrastructures.

IV.PROBLEMS

Indian railway given lots of facilities. many problems at the station. Day by day urbanization with traffic increase at station. Waiting room and parking in problems at peak hours and off peak hours time. Data collection by photography and videography. Parking in two wheelers, four wheelers, taxi stand, and rickshaw stand in problems at station. If one person only stay in 15 minutes so compulsory seven teen rupees. Lots of person everyday in morning put the vehicle and in evening collected vehicle. And some put a two or three day at the station so many spaces fixed. Then others vehicle not drop off on some time. So change of parking system.

V. LITERATURE REVIEW

Parking issue at Vadodara station. Kinjal Jain, Prof. Krupa Dave (April 2015) Baroda is the third largest city of Gujarat state. It is one of four cities with population over 1 million. Baroda is one of the cities having high literacy rate (78%) of Gujarat. One can travel to almost all the strategic location of Vadodara is so that it is a connecting link between Surat and Ahmadabad. The parking area available near railway station is very limited and precious. The most Severe and foremost problem of parking provision would be eliminated. Indian standards of Parking would be followed. The state of art Parking facility, would give an everlasting impressions on the travelers residing in the city or visiting station first time.[1]
Node capacity and terminal management on Indian Railways. Narayan Rangaraj B.N.Vishnu. a case study on Indian railway. It is necessary to be able to clearly quantify node capacity as part of the overall capacity, to match this capacity with traffic requirements, to be able to plan investments related to node infrastructure and to be able to manage the operations at nodes in a effective manner. Indian Railways has evolved over the years by planning the rail network to cover large geographical parts of the network, to reflect both the flow of freight and also to play its role in regional development. For convenience, we can describe the management of fixed infrastructure facilities in the following three. 1) Passenger dominant facilities, 2) freight handling facilities and 3) maintenance oriented facilities. Managerially, more awareness regarding terminal performance, definition of some performance measures and integrated analysis of options to do with node capacity will go some way in addressing the issue. [2]

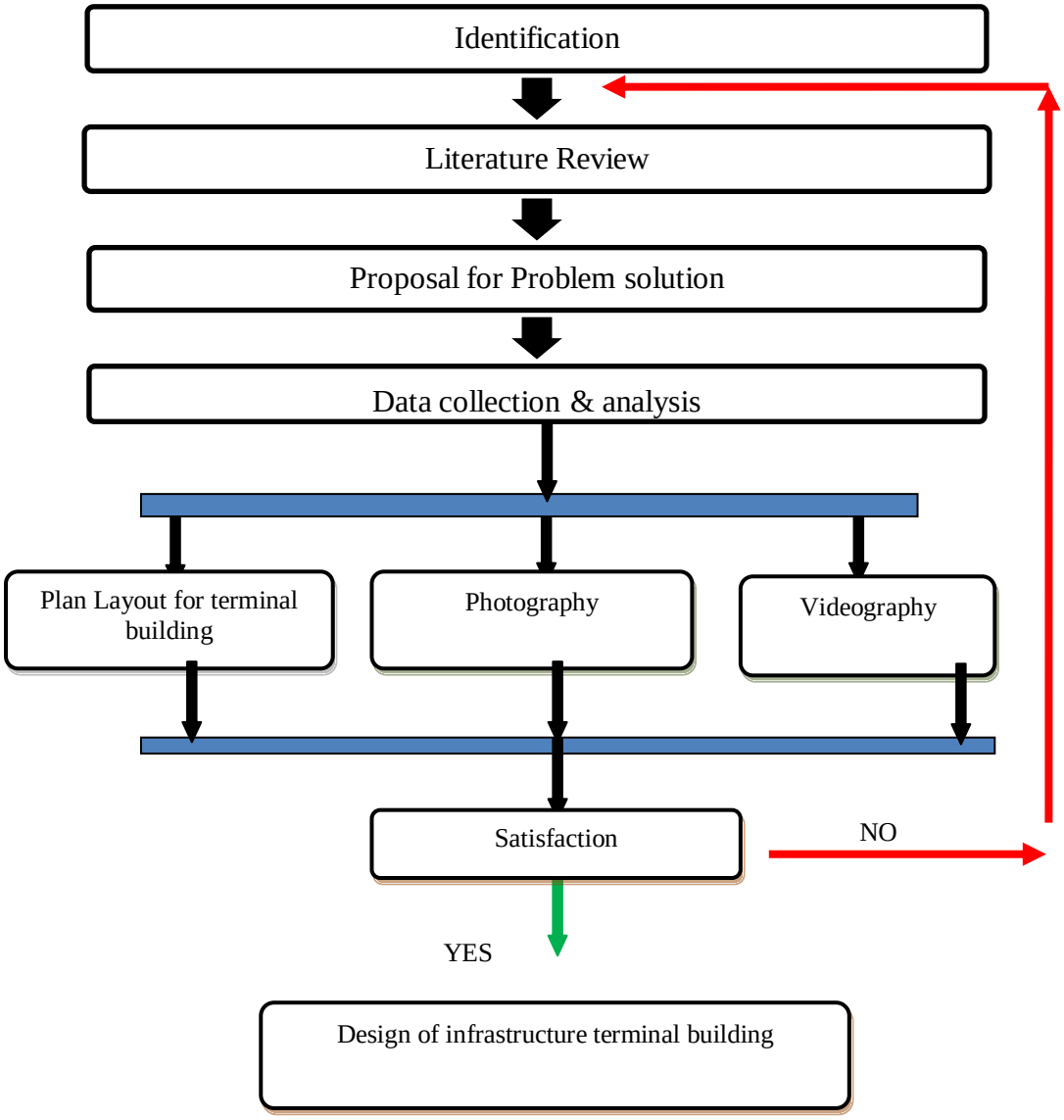
VI. METHODOLOGY

SELECTION OF THE AREA

Ahmadabad has emerged as an important economic and industrial hub in India. Residential areas are densely populated and hence the roads of Ahmadabad see a lot of motorized 2-wheelers (M2Ws) and motorized 3-wheelers (M3Ws) plying on them. For the research project "Kalupur Station Area" was considered as the study area Coordination is 23°01′30″N 72°36′04″E Ahmadabad Junction railway station is the main railway station of Ahmadabad, Gujarat, India. It is also the

biggest and busiest railway station within Gujarat. Railway station elevation is 52.50 meters (172.2 ft).it has connected BRTS and AMTS bus stop, rickshaw & taxicab stand, Car parking & two wheeler parking.

PROBLEM IDENTIFICATION



Two wheeler capacity in 380 vehicles. It's already have to two plot. Both are dimensions 32 × 32 ft. but one parking slot in capacity is 380 vehicle but railway staff and employee are put the vehicle minimum eight hours then other parking slot used at this time. In 2 hours minimum 50 vehicles turn over. so at that time so 350 vehicles at one place. So need a multilevel parking system. At that time vehicle capacity day by day increase in metropolitans' city.

DATA COLLECTION AND ANALYSIS: Data collection by photography and videography. Two methods through to data collection. In-out method survey & license plate survey. Peak hours and off peak hours through data collection at station in four bay. At station in twelve bay already put that vehicle .table no.1 given about parking survey at Kalupur railway station

Bay	Time (6 to 7 am)				Bay	Time				Time				
	0-15	15-30	30-45	45-60	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	10
1	5623	6089	1240	5112		15	30	45	60	15	30	45	60	Turn over
2	3256	-	4510	4510	1	5623	6089	1240	5112	1	1	1	1	4
3	2541	2541	196	196	2	3256	-	4510	4510	1	0	1	1	2
4	2563	4455	4455	4455	3	2541	2541	196	196	1	1	1	1	2
5	2145	2145	2145	2145	4	2563	4455	4455	4455	1	1	1	1	2
6	2546	42	9928	7820	5	2145	2145	2145	2145	1	1	1	1	1
7	5145	4785	4785	7445	6	2546	42	9928	7820	1	1	1	1	4
8	-	4545	4545	4545	7	5145	4785	4785	7445	1	1	1	1	3
9	2563	2563	2563	4875	8	-	4545	4545	4545	0	1	1	1	1
10	4521	4521	1245	1245	9	2563	2563	2563	4875	1	1	1	1	2
11	-	5	1573	1573	10	4521	4521	1245	1245	1	1	1	1	2
12	-	1746	1746	1746	11	-	5	1573	1573	0	1	1	1	2
13	-	4586	4586	999	12	-	1746	1746	1746	0	1	1	1	1
14	223	223	4494	4494	13	-	4586	4586	999	0	1	1	1	2
15	2215	-	4856	4856	14	223	223	4494	4494	1	1	1	1	2
16	2848	2848	477	477	15	2215	-	4856	4856	1	0	1	1	2
17	1547	7804	7804	2580	16	2848	2848	477	477	1	1	1	1	3
18	6359	6359	6359	6359	17	1547	7804	7804	2580	1	1	1	1	3
19	-	8523	8523	8523	18	6359	6359	6359	6359	1	1	1	1	1
20	1245	1245	8456	9696	19	-	8523	8523	8523	1	1	1	1	1
21	6352	7854	7894	4856	20	1245	1245	8456	9696	1	1	1	1	3
22	7856	7856	7856	7856	21	6352	7854	7894	4856	1	1	1	1	3
23	853	5423	5423	5423	22	7856	7856	7856	7856	1	1	1	1	1
24	1756	1756	1756	1756	23	853	5423	5423	5423	1	1	1	1	2

					24	1756	1756	1756	1756	1	1	1	1	1
						Accumulation				20	22	24	24	50
						Occupancy				0.83	0.91	1	1	2.08

- Table no.1 given that vehicles number at station in peak hours. In survey four bay calculate in how many vehicle turn over at that time. So vehicle is 350 stay at one place. In future vehicles increase so difficult to parking at that place.
- Parking volume = 50 vehicles, No. of bays = 24
- Bike size = 1.2 ×1.8 = 2.16m^2
- Parking capacity = area of plot ÷ area of one vehicle = 1024m2 ÷ 2.16m2 = 474 no. of vehicle
- Parking volume = (20+22+ 24+ 24) × 15 ÷ 50 = 27 min./vehicle
- Parking load = (20+22+24+ 24) × 15 ÷ 60 = 22.5 vehicles /hours
- Parking duration = parking load ÷ parking volume
  = 22.5÷27 = 0.83 = 1 vehicle /minute
- Parking turnover = parking volume ÷ no. of bay
  = 27 ÷ 24 = 1.125
- Parking index = parking load ÷ parking capacity × 100 = 22.5 vehicle / hours ÷ 24 vehicles /hours × 100 = 93.75 %

VII. CONCLUSION

The most Severe and foremost problem of parking provision would be eliminated. Indian standards of Parking would be followed. The damage to vehicles caused due to Haphazard parking would be avoided. The time taken to reach the platform for far away parking area would be reduced. The current scenario clearly suggests that redesigning has to be implanted at the earliest using the available resources. The parking area available near railway station is very limited and precious. The land acquisition for this purpose is very difficult hence they are occupied by private sector ages. Hence the only land owned by municipal corporation and railway authorities can be put up to use. It means to provide automatic & manually multilevel parking, underground basement parking. The extent of penetration in both the directions may increase the parking area to such extent that the Indian standards for parking would be satisfied and fair amount of vehicles would be accommodated. It could be change of holding room location, display information system, toilets and drop off zone.

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