

Redesign of Gandhinagar bus terminal a Case study

Jay S. Pandya¹, Prof. Yogesh Patel²

¹M.E Student, Dept. Of (Civil Infrastructure) Engineering, L.D.R.P Institute of Technology Research, Gujarat, India

²Assistant Professor, Dept. Of Civil Engineering, L.D.R.P Institute of Technology Research, Gujarat, India

Abstract - Public transportation is one of the key things in development of country in many ways. Thus proper utilization of various resources related to transport should be evaluate, identified and modified as per the requirement. As the population is increasing day by day further modification or redesigning existing terminals is mandatory for benefits of the daily users. Redesign of Gandhinagar bus terminal is required for the purpose of providing faster, safer, convenient and comfortable transportation movement for passengers and workers. In this study the goal is to provide improved design and infrastructure view, proper space utilization, new required elements can be introducing in a decent manner. Gandhinagar is the capital of Gujarat state. There are so many government offices; industries are located in the city.

Key Words: Terminal, Infrastructure elements, Design, Population, Transportation,

1. INTRODUCTION

Gandhinagar is a planned city with lots of good infrastructural elements being gifted for the overall development of it and still adding structures like Mahatma Gandhi mandir, gift city, etc... So redesigning of bus terminal with respect to public demand and according to modern time should be a key factor in overall development in the public transportation facility in the city.

1.1 NEED OF STUDY

As the population of the capital rises rapidly and more and more people coming to the town for work and different purposes the need of much larger, sufficient, and safer, with compatible movement of buses new revised bus terminal is needs to be adopted in the near future to avoid any problems that can be raised due to old structure.

1.2 OBJECTIVE

- To provide adequate, economical, efficient, reliable, comfortable, safe and environment-friendly modern passenger transport services for the people.
- To create and improve infrastructure for modern Bus Terminals.
- To increase bus connectivity between rural and urban areas.
- To add/modify infrastructural elements like Bank, ATM, Shops, Hotels, Restaurants, Gym, Drivers-conductors resting room.

1.3 SCOPE OF STUDY

To redesign of the bus terminal with respect to modern planning criteria with the best basic facilities and infrastructure being develop to the capital city of the Gujarat.

2. STUDY AREA

Gandhinagar is the capital of Gujarat located 23km from Ahmadabad with coordinates of 23.223° N, 72.650°E. There are 30 sectors in the city with parks, recreational area which gives you green city atmosphere. Area of Gandhinagar: 177KM²(68 sq. m)

- Elevation: 81 m (266ft)
- Population: 292,167(2011) Density: 1700/km²

3. BUS TERMINAL

A bus terminal/terminus where a bus route starts or finish, where vehicles stop, turn or reverse, and wait before start their journey /return journeys. It's also where passengers board.

Reliable, safe and comfortable public transport systems are a precondition for developing sustainable transport systems.

Bus systems, in particular, are extremely relevant since they form the majority of public transport trips.

Improved bus services and developing state of- the-art supporting infrastructure like bus terminals, depots and bus stops can attract users and increase ridership.

3.1 WHY TO REDESIGN:

To provide adequate, economical, efficient, reliable, comfortable, safe and environment-friendly modern passenger transport services for the people.

To provide affordable, safe and sustainable passenger transport services to the public.

For future consideration of modern infrastructure in bus terminal, should be implementing as all the major city of Gujarat is being redesigning it's bus terminal and increase its lifespan and public rush & more revenue generation can be achieve.

3.2. DATA AND SURVEY

Table -1: Data of Bus trips From Gandhinagar:

Direction	Total/ day
To North	114
To South	104
To East	98
To West	86

Table-2: Nearby newly Redesigned Bus terminals comparison:

FACILITY	A'BAD	MEHSANA	VADODARA	G'NAGAR
AC DELUXE WAITING ROOM	YES	YES	YES	NO
RESTURANT	YES	YES	YES	NO
RO WATER PLANT	YES	YES	YES	NO
MODREN SHOPS	YES	YES	YES	NO
NIGHT LIGHTING	YES	YES	YES	NO
BANK AND ATM	YES	YES	YES	NO
BUS STOP SHELTER	YES	YES </td <td>YES</td> <td>NO</td>	YES	NO



Figure - 3.3: Actual image 1

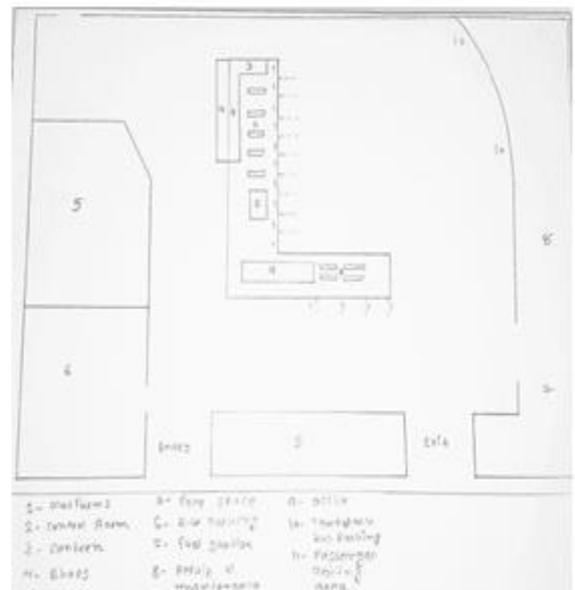


Figure -3.4- Layout



Figure -3.1: Gandhinagar Bus Station



Figure -3.2: Satellite view



Figure -5: Actual image

4. LITRETURE REVIEW

1) Intermodal Stations: A Guide to Sustainable Design:

Metropolitan areas in developing countries are confronted with many traffic problems that directly affect the environment, economic development and social welfare. Public transport can offer citizens sustainable mobility. On average, public transport terminals in developing countries are not designed from an intermodal service perspective. This paper aims to highlight the design issues which should be considered when designing sustainable intermodal stations, such as; modal connectivity, safety requirements for traffic.

Remarks: This is points out on how should development been made with respect to-

- 1 Economic of the country,
- 2 Environment of the country,
- 3 Safety of the passengers.

2) Bus terminal design guidelines:

Public transport holds center stage in the urban transport agenda. A well-functioning and sustainable city cannot be achieved without strengthening its public transport system. Infrastructure plays a vital role in the operation of an efficient, convenient and safe transit system (Trans Link Transit Authority 2011). When a transit infrastructure is designed to enhance passenger experience, its attractiveness is ensured, making it a viable alternative to private motorized transport. The National Urban Transport Policy (NUTP) (MOUD 2006) recognizes that city dwellers are of utmost importance and that all plans must be centered on their common benefit

Remarks: This thesis based on how to construct bus terminal including extra services like for non-motorized modes too. For covering all types of transportation services being facilitate.

3) Design Standards for Planning a Bus Terminus:

A Bus station is a large structure than bus stop for boarding and dropping off the passengers or Bus terminus is a public area from where bus starts or ends its scheduled routes. It serves for the public for bus transportation. The size of the terminus can be decided by analyzing its operational conditions, bus routes, scheduled timings and basic facility requirements. Bus terminus are provided with other facilities such as Shopping Complexes, toilet, drinking water, restaurant, hotels, water treatment plant, hospital, police terminus, auto stand, taxi stand, shopping malls, ATM. This paper explains the design factors and design elements to be considered for the bus terminus plan with the minimum standards.

Remarks: This thesis based on the idea of all the facilities can able to easily accessible in one roof of modern infrastructure.

5. CONCLUSIONS

After redesigning of such bus terminal it will beneficial for the daily users and government for revenue generation itself.

REFERENCES:

- 1) Ola Mohamed Emad El Din Bakry, Dr. Yasser Mansour, Dr. Ruby Morcos, Dr. Ghada Farouk: Intermodal Stations: A Guide to Sustainable Design
- 2) key contributors : Sandeep Gandhi Principal Architect Satyajit Ganguly architecture : shruti khandewal Rajat Kalsi senior architecture: Nilesh Bansal : Bus terminal design guidelines
- 3) From: International Journal of Advanced Research in Basic Engineering Sciences and Technology (IJARBEST) Vol.3, Special Issue.24, March 2017: Design Standards for Planning a Bus Terminus .