

REDESIGN OF KALOL BUS TERMINAL

Deep Shukla¹, Krupa R Dave², Jitendrasinh D Raol³

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

2 Faculty, Civil Engineering Department, L.D.R.P. Institute of Technology and Research, Gujarat, India

3 Faculty, Civil Engineering Department, L.D.R.P. Institute of Technology and Research, Gujarat, India

ABSTRACT

A bus terminal, or terminus, is the point where a bus route starts or ends, where vehicles stop, turn or reverse, and wait before departing on their return journeys. It's also where passengers board and alight from vehicles. It also often provides a convenient point where services can be controlled from. This thesis work is about redesign the kalol bus depot situated in kalol. Kalol buses are included in GSRTC (Gujarat State Road Transport Corporation) which forms a mass transit system of transportation providing a linkage between important cities and terminals such as mehsana, gandhinagar and ahmedabad. In theoretical framework, the focus is on the new concepts and implementations developed in the urban transportation sector which are useful for passengers as well as bus terminal itself. The effective transportation systems regarding lower expenditures were handled according to the travel demands they serve. This work also consist of developing a redevelopment plan of kalol bus terminal to provide latest and advanced features in order to increase the efficiency as well as usefulness.

Keyword : *Bus Terminal, GSRTC, Kalol Bus Terminal*

1. INTRODUCTION

A bus terminal, or terminus, is the point where a bus route starts or ends, where vehicles stop, turn or reverse, and wait before departing on their return journeys. It's also where passengers board and alight from vehicles. It also often provides a convenient point where services can be controlled from. The size and nature of a terminal may vary, from a roadside bus stop with no facilities for passengers or bus crews, to a purpose built off-road bus station offering a wide range of facilities. If the number of vehicles arriving and departing is low, a roadside bus stop, with no facilities, will normally be adequate. With a large number of vehicles arriving and departing, it may be necessary to provide off-road bus station facilities for the convenience of passengers and to reduce traffic congestion. It's essential that stations are not only constructed to a suitable design and with adequate capacity, but also that they are suitably located. There are a number of considerations in deciding the best location. The location should be where routes should logically connect or terminate, as determined by passenger demand patterns. If the station is used as an intermediate stopping point on routes passing through, it should be conveniently located for passengers joining or leaving vehicles.

1.1 Objective of Study

- Enhance the overall prospect of terminal.
- To minimize the risk factors in almost all departments.
- To suggest the implementation of a better management and communication between passengers and various concerned authorities and department.
- To suggest Improvements to increase the flexibility of the terminal for varying traffic during different time periods.
- To suggest a better inter departmental communication.
- To suggest services which can be useful in present as well as future

1.2 Scope of Work

- Safe, efficient and convenient mode of service to the passengers.
- To imply new high-tech features to make it more attractive.
- To give suggestion to make terminal be used for transportation as well as commercial purposes by providing shopping mall, cinema hall and other entertainment and recreational spaces.
- Increase of safety by reducing the risk involving accidents, fire hazard etc.
- Suggestion of a proper and high efficiency parking facility.
- Proper utilization and management of vacant spaces.
- Standardised bus parking facility.
- To suggest measures to increase the capacity of the terminal.
- Fast and easy movement of passengers within the bus terminal.

2. BACKGROUND STUDY

Bus transportation is one of the most important transportation of any city. So for a better functioning of a city's transportation, an efficient and highly advanced bus terminal is required. This will enable passengers to get a good and convenient service of transportation. Redesign of bus terminal includes implementation and installation of highly advanced features and new technologies to make it a better prospect for both transportation and passengers. An integral factor improving a transport system's success is the quality of convenient transfers and the movement of passengers within terminal spaces. It is important to integrate terminal facilities into the physical surroundings.

3. STUDY AREA

- Kalol is a city and a municipality in Gandhinagar district in the Indian state of Gujarat. Kalol is located at $22^{\circ}36'22''\text{N } 73^{\circ}27'47''\text{E}$ / $22.606^{\circ}\text{N } 73.463^{\circ}\text{E}$ / 22.606 ; 73.463 . It has an average elevation of 100 metres (328 feet).
- The main study area of this project is the bus terminal located at Opp. Railway Station, At-, Navjivan Bazaar, Memon Market, Kalol, Gujarat 382721, India.
- it serves as a junction connecting to metro cities like ahmedabad and important places such as gandhinagar, himmatnagar, mehsana and many other small villages.
- It is the main bus depot of kalol along with other bus stops such as ambika bus stop and sindbad bus stop.



Figure -1: Map of kalol

4. DATA COLLECTION

- As of 2011 India census, Kalol had a population of 133,737 with 69,898 males and 63,839 females; it has 13,719 children aged 0–6 (7,397 male and 6,322 female), and 103,561 literates (57,548 male and 46,013 female).

Facilities available at kalol bus depot:

- Waiting area for passengers
- Administration building
- Depot manager cabin
- Pass collection office
- Canteen
- Two wheeler parking facility
- SBI bank ATM
- Enquiry counter
- Water facility
- Bathroom and toilet
- A water tank
- Bus parking facility

Problems defined:

- No high tech features
- Very congested accessible roads
- Infrastructure is old and weak
- Lack of shopping area, recreational spaces and entertainment infrastructure like cinema hall
- No proper place for food
- No cctv camera
- The sitting arrangement in waiting area is not comfortable or proper
- No sign board
- Lack of ITS components such as electronic ticket counter, digital sign boards etc.
- Very poor safety management
- Improper use of vacant space
- No four wheeler parking arrangement
- No proper fencing on entry and exit
- No medical facility
- No stalls or shops for news papers or magazines
- Poor quality of drinking water
- No wifi is available for internet access
- No security checks at entrance

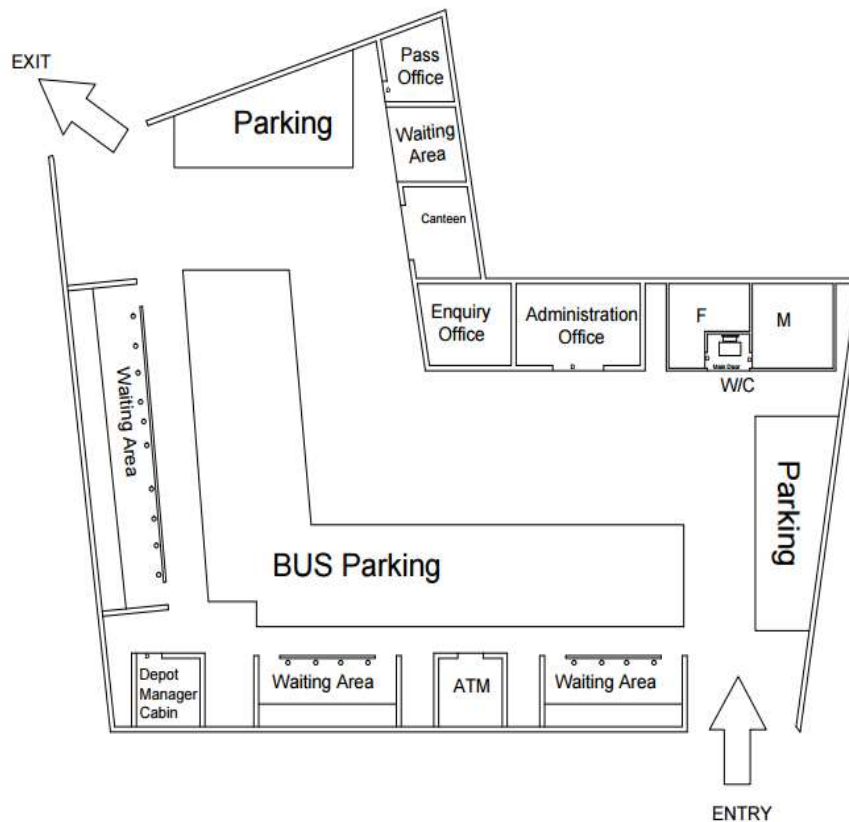


Fig 2: layout of existing kalol bus terminal

- Area of kalol bus terminal:

= 5731.973 Meter square

= 1.146 Acers

= 61698.44 Feet square

= 0.573 hectares

- Topography:

The slope on the kalol bus depot is very much straight and that may cause some drainage problems.

- Vegetation:

There are some trees in the periphery of bus depot which can be cut by taking the permission from local authorities for the expansion and redesign of the bus depot purpose.

- Frequency of Buses at kalol bus terminal

= 20 to 25 buses per hour

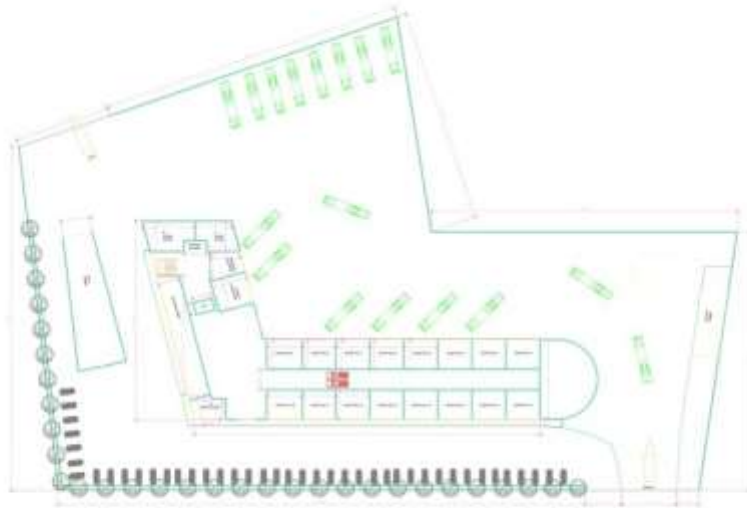


Fig 3: The redesigned plan of Kalol Bus terminal

5. CONCLUSIONS

Following conclusion are made from the above study-

1. Redesigning of kalol bus terminal will provide improved and high-tech services to the passengers at the terminal.
2. By redesigning kalol bus terminal can be used for transportation as well as commercial purposes by providing shops, cinemas and other entertainment space

ACKNOWLEDGEMENT

The author would like to express their sincere thanks to GSRTC(Gujarat State Road Transport Corporation), Mrs Krupa R Dave, Mr J.D Raol and my parents for supporting me in this work.

REFERENCES

- Design of bus station: a case study in Brighton by Bhargav Adhvaryu, University of Cambridge, UK at May 2006
- Bus and Bus Stop Designs Related to Perceptions of Crime by Anne Lusk in 2001
- Explaining walking distance to public transport: the dominance of public transport supply by Rhonda Daniels and Corinne Mulley 29 July 2011
- www.researchgate.net
- Google earth and Google maps
- www.census2011.co.in