

CHAPTER:

5

_PRECEDENTS

Many people have observed that the public realm has declined, partly due to the reduced availability of public space and public life. They observed that the traditional public space have transferred to private realms for example leisure activities, entertainment, gaining information and consumption all are undertaken at home through television and the internet. Activities that traditionally could only be available in collective public forms have increasingly become available in private forms, while the use of public space has been challenged by lots of different developments, such as increased private mobility (Carmona; 2003:110).

Keeping this in mind and reviewing writings of urban theorists, it is easy to come to the conclusion that the public-transport interchanges in the context of South African cities have the ability to exhibit the desirable qualities for good urban places and spaces.

“Transport interchanges have become the agora of the newly democratic state, the place of maximum commercial exchange and social interaction” (Deckler; 2006: 59).

The last few years have shown a tremendous increase in providing formal facilities for the taxi industry. Transport interchanges with a variety of supporting functions for example the Baragwanath Public Transport interchange and traders market, the Faraday market and Transport Interchange, and the Claremont Public Transport Interchange all show innovative thinking for these important nodes in the city landscape.

Although this thesis project focusses more on the new proposed BRT system for Pretoria, the local precedents for transport interchanges are mostly for the taxi and local bus services. The public nature of these facilities are

of great value in understanding the working of public facilities where vehicles and pedestrians meet.

According to the Bus Rapid Transit Planning Guide of June 2007 there exists only two truly “full BRT” systems in the world namely Bogota in Columbia and Curitiba in Brazil (BRTPG; 2007: 14).

Most new BRT systems today are based on the systems of these two cities (BRTPG; 2007: 25).

For the typological investigation international precedents the “TransMilenio” of Bogota and the BRT of Curitiba will be looked at and locally the new Rea Veya BRT system of Johannesburg.

The investigation of the Reya Veya system is of great value due to the fact that it is the first BRT system implemented in South Africa.

The aim of precedent study is to gain a greater understanding of the working of these BRT systems with their supporting facilities. The investigation will focus mostly on the design and working of the stations themselves as this is of great importance for designing the station facilities for the intended transport interchange for the thesis project.

The investigation into the local transport interchanges will also contribute to gaining valuable insight in the working of these transport facilities in the public environment of South Africa.



FIG 5.1 _Rea Veya BRT Johannesburg





FIG 5.3 View of Traders Market at the Baragwanath Public Transport Interchange and Traders Market



FIG 5.4 View of Traders Market at the Baragwanath Public Transport Interchange and Traders Market



FIG 5.6 TransMilenio Bogota



FIG 5.2 TransMilenio Bogota



FIG 5.5 BRT Station Tube in Curitiba



FIG 5.7 Informal traders at Baragwanath Public Transport Interchange and Traders Market

INTERNATIONAL PRECEDENTS

This is until the “TranMilenio” BRT system in Bogota radically transformed the perception of BRT around the world. Today the system is serving over 1.2million passenger-trips per day. It is estimated that by 2015 when the entire system is completed an estimated 5million passenger-trips per day (BRTPG; 2007:25).

The success of the system can be linked to various key elements that increase the efficiency of the system. Curitiba’s BRT system also implements the same elements that contribute to the success of the system. These elements will briefly be looked at in the next section.

FARE COLLECTION SYSTEM

The method the fare collection will have a great impact on the operational efficiency of the system (BRTPG; 2007: 441). An efficient fare collection system can have an impact on boarding and alighting time, time queuing for tickets and clearing turn stiles.

The two systems that can be implemented are: Off-board fare collection and on-board fare collection. From the investigation it was found that off board fare collection is the better option for an efficient BRT system, as it reduces long delays that generally accompany on-board fare collection, it eliminates the risk of the bus being robbed for the fare money.

It is important to note that if such a collection system is chosen a closed station construction is needed. There must exist a physical separation between the customers who paid and those who have not. Other benefits that a closed station provides is protection from the elements and increases safety for the commuters (BRTPG; 2007: 442).

TURNSTILE OPTIONS

The closed station design with off board fare collection requires access control in the form of turnstiles. The TransMilenio makes use of a rotating arm turnstile for its protection against fare evasion and safety when passing through together with a drop-arm turnstile to allow people with special needs to easily gain access to the station platform (BRTPG; 2007: 453).

PLATFORM

Most BRT systems have introduced ‘platform level boarding’. This means the platform is the same height as the vehicle floor, that allows for faster boarding and alighting, and also provides easy access for persons in wheelchairs, parents with strollers, young children and the elderly (BRTPG; 2007:259).

PHYSICAL ENVIRONMENT

Pedestrians prefer at-grade crossings due to the directness of access these crossings provide. Stairs and ramps cause inconvenience and can cause the physical disabled to lose access to the facility (BRTPG; 2007: 485).

BICYCLE FACILITIES

The area of the BRT catchment area can significantly be integrated with bicycle usage. If secure bicycle parking facilities are provided customers will be confident to leave the bicycle at the station or terminal during the day (BRTPG; 2007: 7).



FIG 5.8_Curitiba BRT StationTube



FIG 5.9_At-grade crossing at TransMilenio



FIG 5.10_Access control at TransMilenio



FIG 5.12_At-grade crossing at TransMilenio



FIG 5.14_level boarding at Trans Milenio



FIG 5.11_Access for people with special needs



FIG 5.13_Bicycle facilities at TransMilenio stations



REA VEYA BRT STATION JOHANNESBURG

The Rea Veya BRT station in Johannesburg provides a great opportunity to study a BRT station in its built form, as this is the first BRT station in South Africa, based on well known international precedents such as the BRT of Curitiba & TransMilenio Bogota.

1) PASSANGER AMENITIES (Combined busstop design)

a) Shelter

- i) Protection against weather
- ii) Rain
- iii) Sun
- iv) Wind
- v) Cold
- vi) heat

b) Information

- i) Transit Route details
- ii) Advertising
- iii) Schedule and delay info
- iv) Signage (facilitate passenger convenience)

-Electronic display of expected bus arrival

-Entry for disable

- v) Audio systems for visually challenged people

c) Furniture

- i) seating
- ii) Leaning rails
- iii) dustbins

2) SAFETY AND SECURITY (Combined busstop design)

- i) visibility – commuters should be able to see the surrounding areas and be seen from outside the stations
- ii) adequate illumination
- iii) closed circuit television

3) BARRIER FREE DESIGN (Combined busstop design)

- i) accessibility for the physically challenged
- ii) station to facilitate easy circulation
- iii) access via ramps for stations with raised platform

4) BRT PLATFORM DESIGN CHARACTERISTICS (Combined busstop design)

-commuters should be able to clear the platform before the arrival of the subsequent bus.

-platform vehicle interface influence boarding and alighting speeds.

-high platform level boarding obtained through precision docking

-platform size – enough space for waiting commuters, commuters flowing in and out.

5) CLIMATIC PROTECTION (Combined busstop design)

- i) Passive solar design and natural cooling techniques
- ii) Energy demand / source

6) FARE COLLECTION (Combined busstop design)

- i) off board fare collection reduces bus dwell time and enables rapid boarding
- ii) station divided into paid areas and free areas



FIG 5.15 Automatic sliding doors at Rea Veya



FIG 5.16_Electronic schedule board



FIG 5.19_Ramped platform for easy docking of BRT bus



FIG 5.21_At-grade crossings



FIG 5.17_Clear signage



FIG 5.20_Ticket sales inside station



FIG 5.18_Safety - fire hose



FIG 5.22_Platform raised for level boarding



FIG 5.23_Turnstiles for fare collection & access control