

Another link for integrated public transport

The Johannesburg Development Agency (JDA) has been involved in numerous inner city projects, including the first bus rapid transit (BRT) project in South Africa. **Candice Landie** takes a closer look at the latest BRT developments along Rissik and Harrison Streets.

Aerial photos image courtesy: Clive Hassall

THE JOHANNESBURG DEVELOPMENT AGENCY (JDA) is responsible for all infrastructure and construction developments on Johannesburg's Rea Vaya (BRT) project, with a key element being the stations. A specific station look and feel was required for the city. The stations have to be constructed in limited time frames and under

very restricted working conditions, due mainly to heavy traffic congestion in the central business district (CBD).

"Due to the extreme construction pressures within the CBD, the station modules are designed off-site, and assembled on-site, once the foundations are complete. The stations have to be quick to construct," says

Vuyiswa Vuyi, senior development manager at the JDA. The stations are placed in the centre of roads along trunk routes at approximately 500 m intervals. In addition, level boarding and alighting from buses is required. Physical

An aerial view of the Orlando BRT station and Orlando Stadium





TRANSPORTATION

REA VAYA STATION SAFETY FEATURES

- Level resting sections or landing areas halfway up the station ramps.
- Ramps that flatten for a length of 1 m approaching the station entrance.
- No-skid, black-paved ramps.
- Light emitting diode LED lights along ramp edges for increased visibility at night.
- Same-door entrance and exit.
- Emergency exit ramps in line with fire regulations.
- Ticket counters that are at a height accessible to seated persons and children.
- Ticket booth glass that has a built-in induction loop and handsets to enable better communication for people with hearing aids.
- 900 mm wide turnstiles that accommodate commuters carrying luggage, pushing prams, in wheelchairs, etc.
- Colour contrasts used for warning and guidance throughout the stations, for example, on chrome surfaces like handrails, door edges, the upper edge of ticket counters, etc.
- Lean rails inside the station (but no seating).
- Signage in pictograms where possible, audio announcements and vehicle management system.
- The development of detailed way-finding signage plans (still to be fully implemented).
- Ambassadors deployed at each station to assist commuters and guide special needs passengers.

site constraints dictate the ultimate configuration of a particular station. Typical configurations are:

- Back to back, single-sided (uni-directional), staggered and staggered offset or special designs.
- Stations can have one or a number of modules (buildings), depending on the capacity requirements, in any of the above configurations.
- Rea Vaya station modules are standardised into four standard widths (for ease of construction), namely 3.5 m, 4.5 m, 5 m and 5.5 m.
- Entry to stations can be shared between modules, or modules can have separate entrances.

The stations are designed to be efficient, cost effective and low maintenance (whilst utilising natural lighting and natural

The stations are designed to be efficient, cost effective and low maintenance

ventilation). Each station also takes the needs of all commuters into consideration, especially those with special needs.

Rissik and Harrison

At a total cost of R89.13 million, the Rissik and Harrison Streets BRT development forms a critical part of the Rea Vaya network and will link the Johannesburg CBD with Trunk route 1 and 2 (and will

RIGHT An aerial view of the bus depot

further link with the Gautrain). This section of the project provides a south-north trunk route (dedicated bus way) between Trunk Route 1 (T1), which runs along Market and Commissioner Streets, and Trunk Route 2 (T2), which connects Noordgesig, Coronationville, Auckland Park and Parktown. Both T1 and T2 connect with the Gautrain at Park City. The project forms part of the Integrated Rapid Public Transport Network, a National Department of Transport initiative aimed at improving public transport systems. Construction on the project started on 17 November 2010 and is scheduled for



ABOVE A completed BRT station

completion on 17 November 2011. It includes the upgrading of sidewalks, civil design: roads and services (water, stormwater, electrical and street lighting), structural design: BRT stations, pavement design: road layer works and sidewalks, and geotechnical engineering. The scope of works is as follows:

- *Plein Street, between Harrison Street and Rissik Streets:* The construction of the bus lanes are for two directional bus traffic, bounded by one mixed traffic (private and public users) lane in each direction.



IMIESA
01 Jul 2011, p.51

- *Rissik Street, from Commissioner Street to Plein Street:* This section consists of the construction of a single bus lane bounded by single mixed traffic lanes. The mixed traffic lanes are not reconstructed (except at the station), and are rehabilitated by the milling off and construction of a new asphalt overlay.
- *Harrison Street, from Plein Street to Commissioner Street:* This section consists of the construction of a single bus lane bounded by mixed traffic lanes. The mixed traffic lanes are generally not reconstructed (except at the station), and rehabilitated by the milling off and construction of a new asphalt overlay. The exception being between Bree and Jeppe Streets, where the full road width has been reconstructed to improve the road cross-section.
- *Rissik Street north, between Plein Street and Smit Street:* The construction of bus lanes in this section consists of a double lane for two-directional bus traffic. Two northbound mixed traffic lanes are provided on the west side of the two directional bus lanes. The mixed traffic lanes are not reconstructed, except where the road angle is too steep to accommodate trafficked lanes at the station and for road widening. The road is rehabilitated by the milling off and construction of a new asphalt overlay in these sections.
- Construction of two BRT stations along Rissik Street and Harrison Street, as

A BRT station under construction



MATERIALS USED FOR THE BRT LANES

- 40 mm asphalt surfacing
- 150 mm asphalt base
- 150 mm upper sub base
- 150 mm lower sub base
- 150 mm sub grade

PROJECT TEAM

Project managers	Archway Projects
Design engineers	Gibb
Quantity surveyors	Davis Langdon
Health and safety agent	Empowerisk
Public participation consultant	Nemai Consulting
Environmental control officer	Nemai Consulting
Contractor	Lonerock / Maziya JV

