

# THE PEDESTRIANISATION OF CITY STREETS: A MOVE TOWARDS RECLAIMING PUBLIC SPACES IN THE CITY OF CAPE TOWN, SOUTH AFRICA

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## **Abstract:**

The need for pedestrian spaces can be seen as far back as the roman times but as the benefits of vehicular transport became more pronounced and the mode was used more frequently, there was a dramatic increase in the confrontation between vehicles and people. With the introduction of the automobile, a large amount of pedestrian spaces were being encroached. City centres were increasingly becoming car oriented and moved away from being people orientated. This was and still is a global phenomenon and a result of economic growth and industrialisation. No one could have predicted the explosive growth of car use.

South African Cities was not immune to the traffic problems which plagued other countries around the world. Car usage in South Africa has grown steadily; South Africans however view cars as not only a means on transportation but more of a status symbol. Commuters in South African cities also have no alternative but to rely on private transport as convenient public transport is not readily available. During December 2007, Cape Town's peak tourism season, a pilot pedestrianisation project was run in the City of Cape Town. The roads surrounding the 300 year old Greenmarket Square was pedestrianised. Initial success of the six week scheme motivated council authorities to permanently close the square to traffic. Roads closed around the square included a short stretch of Shortmarket Street, connecting the already pedestrianised street St Georges Mall to the square as well as a small stretch of Burg Street, which ran through the Greenmarket Square. The pedestrianisation of Greenmarket square has dealt benefits mainly for the restaurants and coffee shops around the square. Changes in turnover range between 15 - 80%. These changes are attributed to the ability for restaurants to provide seating on the sidewalks and square and provide a safe environment for people to interact with each other. The overall feeling on pedestrianisation was a positive one. The traders and shop owners do have the expectation that business will improve once the square has been fully upgraded.

A SATURN dynamic assignment model was used to simulate the effect of certain road closures to traffic as part of an extension to the pedestrian network. These road are vital to start forming a formalise pedestrian network within the CBD. From the

results, the better road closure is that of Long Street, a vibrant road within the CBD, which has both an active night life as well as large foot traffic during the day. The road is currently being used as a shortcut through the City and is ideal for pedestrianisation.

**Key Words:** Pedestrianisation, transport modelling, economic impacts

## 1 Introduction

The need for pedestrian spaces can be seen as far back as the roman times when Julius Caesar had to ban carts and chariots from the streets of Rome from sunrise to sunset due to the conflict between pedestrians and wheeled traffic. Similarly, the forum in Pompeii was banned to all modes of transport other than walking (Hass-Klau, 1990). But as the benefits of vehicular transport became more pronounced and the mode was used more frequently, there was a dramatic increase in the confrontation between vehicles and people.

With the introduction of the automobile, a large amount of pedestrian spaces were being encroached. City centres were increasingly becoming car oriented and moved away from being people orientated. This was and still is a global phenomenon and a result of economic growth and industrialisation. No one could have predicted the explosive growth of car use.

By the late 1950s, European cities were suffering significantly due to their radial street geometry, with an increase in congestion, pollution and a decrease in the state of the urban fabric. It became increasingly clear that private vehicles had to be barred from entering the city, especially the historic core, which was characterised by narrow streets. In the 70's a movement started in Europe to reclaim public spaces from the private vehicle. By 1975, most major European Cities banned cars from historic and retail areas within the CBD. Public areas were revitalised and as a result cold and dormant cities become alive with people.

South African Cities was not immune to the traffic problems which plagued other countries around the world. Car usage in South Africa has grown steadily, and congestion levels rival those in US cities. South Africans however view cars as not only a means on transportation but more of a status symbol. In many instances, commuters in South African cities also have no alternative but to rely on private transport as convenient public transport is not readily available.

In the 1970s, South African engineers and planners realised that congestion was a major problem in the City Centres and as such put together plans to pedestrianise historic quarters, especially in the City of Cape Town. Included in these plans was to create Pedestrian Squares in the historic quarter and link the squares with pedestrian walkways. One of the proposed pedestrian squares was Greenmarket Square,

with adjacent Shortmarket and Longmarket Streets being closed to vehicular traffic. Unfortunately, these plans were never implemented and the only pedestrian precinct in the City of Cape Town was implemented in the 1980s at St Georges Mall, a short pedestrianised street in the heart of Cape Town.

During December 2007, Cape Town's peak tourism season, a pilot pedestrianisation project was run in the City of Cape Town. The 300 year old area earmarked for pedestrianisation, known as Greenmarket Square, is located in the heart of the CBD and has a colourful history. Greenmarket Square first served as a slave market, then became a fruit and vegetable market and in the 1950's became a parking lot. In the 1980's its potential was recognized and was converted into an informal trading area two days a week and its potential grew, but it still remained a parking lot on days when it was not occupied by the popular flea market. Initial success of the six week scheme motivated council authorities to permanently close the square to traffic. Roads closed around the square included a short stretch of Shortmarket Street, connecting the already pedestrianised street St Georges Mall to the square as well as a small stretch of Burg Street, which ran through the Greenmarket Square as shown in **Figure 1**.

The City of Cape Town has earmarked a total of R300 million to uplift the square, including formalising and downsizing the informal traders, constructing better ablution facilities, street furniture and constructing a stage on the square for night time concerts and other events.



**Figure 1: Extent of Road Closures in the City of Cape Town**

One of the most important points arising from the report in 1975 was that pedestrian schemes cannot be effective if existing traffic is ignored. In 1975, 34160 cars were entering the City Centre in the peak hour, in 2007, there were over 170 000 cars en-

tering the CBD, leading to even greater congestion. The City of Cape Town still has no effective public transport and vehicular traffic in the CBD has increased by about 500% over the last 25 years. One cannot merely close internal CBD roads without knowing the impact on the rest of the network. As such a Saturn dynamic reassignment model was set up for the entire Cape Town CBD to determine the effect on the Inner City road network as well as the effect an extension of the scheme will have on the traffic in the CBD. A survey of the traders on the square and shop owners, with frontages on the square, was conducted six months after the initial scheme to determine the effect pedestrianisation had on their turnover as well as their perception pedestrianisation of Greenmarket Square.

## 2 Stakeholder Survey and Transport Modelling

### 2.1 Stakeholder Survey

A survey was conducted six months after the initial pedestrianisation scheme was implemented. The survey group included all formal business owners and restaurateurs around the square as well as a random selection of informal traders which currently trade daily on the square. These traders sell anything from African Curios to T-shirts and CDs and cater more for the tourist rather than the locals. Everyone in the survey group was on the square for longer than one year.

The survey was designed to establish if there were any direct economics benefits due to pedestrianisation as well as the perception of pedestrianisation of the various stakeholders on the square. The indicator used to measure the economic benefits was a change in turnover. Respondents also gave what they felt were the attributing factors to changes in their turnover. The Respondents were also asked how they felt about pedestrianisation of the square and if they thought it was positive change or a negative change.

#### 2.1.1 Results from the Stakeholder Survey

The results of the survey are given in Table 1 and 2 show that there is the scheme has not benefited everyone on Greenmarket Square. The worst affected are the informal traders.

Table 1: Percentage change in turnover for businesses on Greenmarket Square

Sector	Decrease	No Change	0-25%	26-50%	51-75%	76-100%
Fast Food/Restaurant	0%	0%	50%	17%	17%	17%
Goods	50%	50%	0%	0%	0%	0%
Informal Trader	43%	43%	14%	0%	0%	0%
Overall	30%	39%	17%	4%	4%	4%

Table 2: Perception of Pedestrianisation for businesses on Greenmarket Square

The group that has benefited the most from the scheme is the fast food and restaurant establishments around the square. Owners attribute the increases in turnover to the ability to provide seating on the sidewalks and square outside their restaurants. During the summer months this area is vibrant, and attracts a lot of locals and tourists alike. In this aspect, Cape Town’s pedestrianisation scheme does follow the global trend.

There are about one hundred traders on Greenmarket Square, and their stalls are tightly packed on the centre of the square as can be seen in **Figure 2**. They bring in their goods at 5am and take their goods away again in the evening. There is currently no storage facility on the square for these traders. Many of them sell the same African curios and there is little diversity in the goods on sale. The traders cater rather for the tourist market than the locals. Traders attribute the decrease in turnover to fewer tourist buses coming to the square due to the road closures.

Sector	Positive	Indifferent	Negative
Fast Food/Restaurant	100%	0%	0%
Goods	50%	0%	50%
Informal Trader	23%	23%	54%
Overall	48%	13%	39%



Figure 2: Greenmarket Square shortly before pedestrianisation scheme (SA Tourism, 2007)

## 2.2 Saturn Modelling

A SATURN dynamic reassignment model was coded for the entire CBD for the City of Cape Town. The model was used to test various road closure scenarios including the current pedestrianisation scheme on Greenmarket Square. There were two scenarios tested, the first scenario is closures of Longmarket and Shortmarket Streets. These streets run adjacent to the square. There are also fewer access garages on Shortmarket Street and as such access and deliveries would not be adversely affected. Both these streets link the already pedestrianised St Georges Mall with Greenmarket Square.

The model was also used to test the effect on the inner city traffic if the pedestrianisation scheme was extended to include Long Street and the Long Street was closed from Strand Street to Whale Street. This particular segment was planned as part of the City of Cape Town's Pedestrianisation Scheme in 1975. Both during the day and at Night, Long Street is bustling with people and is the heart of the Cape Town CBD. It has many restaurants and cafes along the street as well as many clubs, making it a hot spot for both locals and tourist alike. It is currently a one-way couplet scheme with Loop Street (see Figure 1). It has parking on either side of the road and pedestrians often have to compete with speeding vehicular traffic. During the day, Long Street is used as a shortcut through the City.

Long Street has also been identified as a possible pedestrian route for the 2010 World Cup, and is planned to be closed and converted into a transit mall for the City of Cape Town's new Bus Rapid Transit System. The intention of the model was to test the closure of Long Street and how traffic is then reassigned on the network. The model was used to identify hotspots and predict the extent of the congestion due to the closure of Long Street.

### 2.2.1 Results from the Transport Modelling

Three key indicators were used to compare the base model with the two scenarios. These are the average delay experienced by a vehicle on the link, the vehicle / capacity ratio on the link, which indicates a level of congestion and the level of operation of the link and the average vehicle queue measure in passenger car units (PCU). These are summarised in Table 3.

Scenario	DELAY(s)		V/C		AVE QUEUE (PCU)	
	Buitengracht	Strand	Buitengracht	Strand	Buitengracht	Strand
Link						
Base Year	56	5	102	31	14	1
Shortmarket/Longmarket	250	129	112	70	74	35
Long Street	117	10	58	77	28	4
Change due to Shortmarket/Longmarket Closure	446%	2580%	110%	226%	529%	3500%
Change due to Long Street Closure	209%	200%	57%	248%	200%	400%

From the results, the closure of Shortmarket and Longmarket Street show a greater delay for vehicles on the links, an increase in links being overcapacity as well as more cars queuing on a link. The CBD is worst affected by those road closures

rather than the closure of the historic stretch of Long Street. In both scenarios, road closures result in a dramatic change to the congestion levels on Strand Street.

### **3 Conclusions**

From the Cape Town experience, the pedestrianisation of Greenmarket square has dealt benefits mainly for the restaurants and coffee shops around the square. Changes in turnover range between 15 - 80%. These changes are attributed to the ability for restaurants to provide seating on the sidewalks and square and provide a safe environment for people to interact with each other. However, for informal traders, some of whom have been on the square for more than ten years, a decrease in turnover was experience. The overall feeling on pedestrianisation was a positive one. The traders and shop owners do have the expectation that business will improve once the square has been fully upgraded.

A SATURN dynamic assignment model was used to simulate the effect of certain road closures to traffic. These road are vital to start forming a formalise pedestrian network within the CBD. From the results, the better road closure is that of Long Street, a vibrant road within the CBD, which has both an active nights life as well as large foot traffic during the day. The road is currently being used as a shortcut through the City and is ideal for pedestrianisation.

### **References**

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