

EMPIRICAL STUDY

5. Pilot studies

5.1 Introduction

The following figure illustrates the structure of Chapter 5.

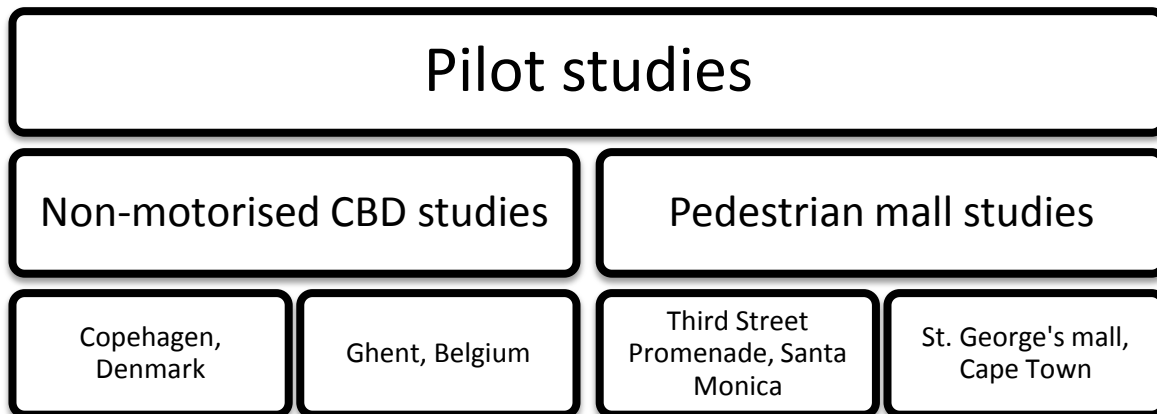


Figure 11: Chapter 5 layout

Source: Own construction (2013)

The pilot studies in this Chapter are discussed in order to obtain information to identify best-practice approaches. The pilot studies were divided into two categories namely Non-motorised CBD studies and Pedestrian mall studies. Both (non-motorised CBD studies and pedestrian mall developments) categories represent non-motorised transportation developments and are therefore relevant to this study.

Copenhagen, Denmark was chosen and discussed as a pilot study due to the fact that it is seen as a highly successful car-free CBD stretching over 9.6ha. It is also regarded as one of few studies with before and after pedestrianisation retail data. Therefore results can be compared and the success of pedestrianisation measured.

Ghent, Belgium also represents as a pilot study due to the fact that it resembles numerous criteria of the study area (CBD of Uppington). It is not metropolitan and only accommodates approximately 243 144 residents. It was decided to pedestrianise a portion of the CBD due to, inter alia, high fatalities and traffic congestion. The development can be considered successful as the city was awarded the European Ashden award.

Pedestrian mall developments were discussed in general and form part of this study due to the fact that it was a highly popular type of development, but later on, almost vanished in the USA as it was opened to vehicle traffic again. In the last few years it seems to have become more popular again but for different reasons. Important lessons can therefore be learned from this type of non-motorised developments.

Third Street Promenade mall in Santa Monica was discussed due to the unique approach that was followed. In South Africa St. George's mall is discussed as one of few pedestrian mall developments in South Africa. The success of five pedestrian mall developments were determined by feedback received from the internet site Tripadvisor.com; by utilising this site, the feedback from 2 249 visitors in five cities (two continents) could be obtained.

5.2. Non-motorised CBD studies

5.2.1. Copenhagen, Denmark

Notwithstanding significant trends among studies of pedestrianisation; the fact remains that determining the impact of pedestrianisation is difficult in complex urban environments. The many variables which form part of the urban environment make it difficult to know whether it is indeed pedestrianisation which has had a favourable impact on the city. Strøget, Copenhagen stands alone as the only widely recognised case-study which provides data indicating retail trade before and after pedestrianisation has occurred (Lee, 2008:11).

Merchants in Strøget (main pedestrian street in Copenhagen, Denmark), many of whom initially opposed closing the streets for vehicles, reported sales increases of between 25% and 40%. This concreted the fact that closing streets in the CBD for private vehicles could have positive financial impacts for retailers (Wallar, 2007).

In the 1960s Copenhagen was a typical European city with no tradition for use of public outdoor spaces as a gathering place for residents. People walked on narrow sidewalks of the inner city squeezed between parked cars, hence walking was not a pleasure (Gemzøe, 1996: 5). On 17 November 1962, Copenhagen's main street, Strøget was pedestrianised. This marked the beginning of a gradual transformation that has continued since. Currently (2013) the city centre of Copenhagen has over 96 000m² (9.6ha) of car-free space (Wallström, 2009: 14).

The following figures illustrate Strøget, Copenhagen before and after pedestrianisation.

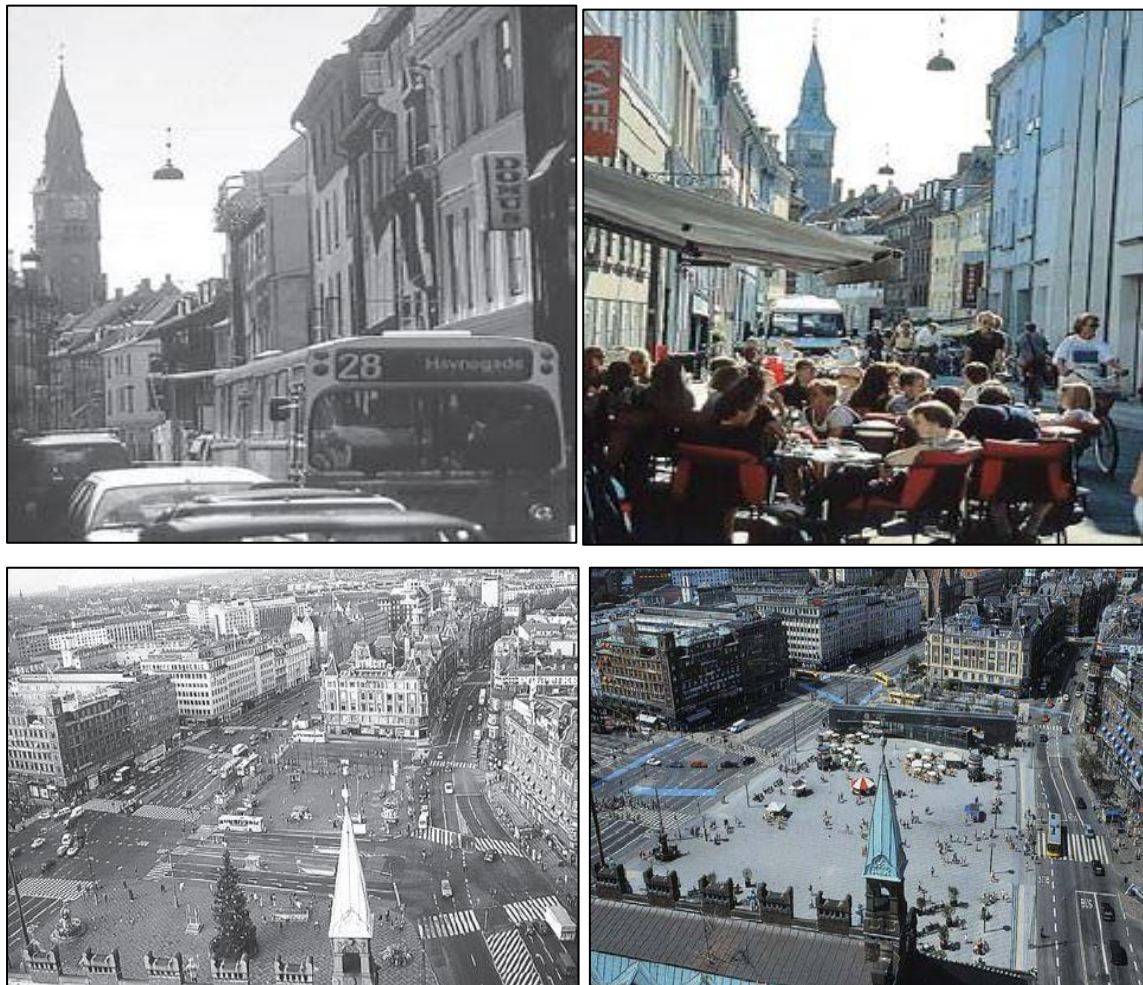


Figure 12: Strøget, Copenhagen before and after photos

Source: Wallström (2009)

Gemzøe (1996) lists the following benefits of transforming Copenhagen's CBD from a vehicle oriented area into a pedestrian -only area:

- Strøget Street (in the CBD of Copenhagen) which is between 10 and 12 metres in width, accommodates pedestrian traffic equal to the most travelled of the national highways in Denmark within a 24 hour period.
- Gradual transformation took place from merely walking and window-shopping in 1968 to a multitude of activities including music entertainment, political activities, small trade and a growing number of outdoor cafes.
- Whilst the population remained stable the number of pedestrians grew 4 times from 1962 to 1995.

- Copenhagen underwent a process that has changed the function of the public spaces from primarily accommodating traffic to more people-oriented urban recreation forms. Today the inner city as a whole is dominated by pedestrian traffic as 80% of all traffic is on foot and 14% cycle.
- The gradual decrease in parking spaces and the growing cost have taught residents not to go by car to the city centre. The city works perfectly with a very low number of parking bays per resident.
- The biggest change came in the form of relocation. While the population of greater Copenhagen remained on 1.3 million, people residing in the CBD went up 4 fold since 1968.
- A constant correlation measured from 1968 to 1995 was that for every 14 m² (or parking bay) transferred from vehicle to pedestrian space, 1 person has settled down in the CBD.

The following figure illustrates the different phases of pedestrianisation in Copenhagen from 1962 to 1996.

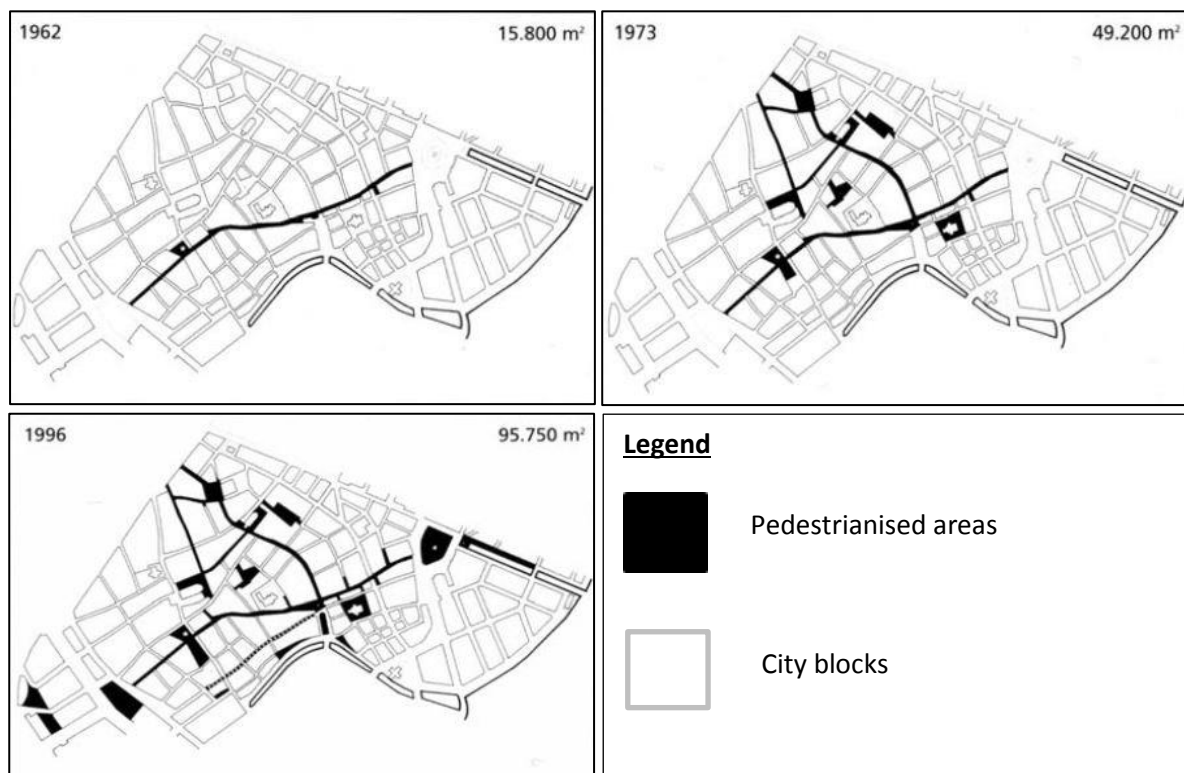


Figure 13: Transformation of Copenhagen's CBD

Source: Gemzøe (1996).

The best-practices regarding the development of a non-motorised area based on this pilot study example could be derived from above as follows:

- Data was measured before the implementation of a car-free development. Continuous measurement took place to determine the positive/negative results.

- The implementation of the car-free area was phased in. This was done so that residents could get used to the new system.
- A main street (Strøget) which accommodated heavy vehicle traffic was transformed into a pedestrian-only street.
- Outdoor public spaces were transformed into active hubs, attracting a larger number of residents during day and night.
- The CBD became a more popular residential node after the restriction of motorised traffic. A positive correlation was thereafter initiated between the “residents residing in the CBD” and “the pedestrianisation of public space (streets).”

5.2.2. Ghent, Belgium

The city of Ghent (Gent in Flemish) is located in the European country of Belgium. It is the capital and largest city in the East Flanders province that forms part of the Flemish region and accommodates approximately 243 144 residents and a city centre consisting of the largest pedestrian space in Belgium (Ghent, 2013).

The plan (Mobility plan for inner-city Ghent) was initiated due to the extreme mobility problems experienced in the city, and more specifically the Central Business District of Ghent. The high fatality rate, increased traffic congestion and accessibility problems threatened the viability of the social, economic and ecological sectors. In addition to it also generated an increasing discomfort for non-motorised and public transport users (Rouvoij, 1997:3).

The city management accepted the fact that they were the creators of this immense problem; as policies were put in place decades ago to ensure that suburbanisation could take place in the city. It materialised and generated the current mobility problems. Management took a forceful decision to terminate (1997) planning and to redirect in the opposite direction, which is the concept of a compact city (Rouvoij, 1997:3).

The first step to transform the CBD of the city was taken in 1993 (Ghent Bicycle Plan, 1993) with the adoption of a cycling strategy comprising a number of measures to improve cycling and cycling infrastructure in the city. The comprehensive mobility plan for Ghent city centre followed in 1997 (Wallström, 2009: 39).

The main aim of the Mobility Plan was to create a liveable city in which attention is given to all modes of transport and priority to pedestrians, cyclists and public transportation. The plan included the following core elements (Wallström, 2009: 40):

- The removal of all private vehicle through-traffic by creating a thirty-five (35) hectare pedestrian zone and traffic-flow measures.
- P-routes (parking routes) around the city centre ensure optimal accessibility to all destinations and especially to underground parking garages. A parking guidance system makes finding available parking bays easy.
- Traffic calming elements have been introduced in the CBD: speed limits in the pedestrianised earmarked area have been set at 5 km/hour for those with permitted motorised access.
- Streets and squares have been renovated with the aim of making the CBD more attractive to residents and tourists.
- Traffic regulations are enforced by two permanent full-time uniformed police that patrol the area on bicycles. Illegally parked vehicles are towed away.

The following figure indicates elements of the Ghent City Centre Transport Plan, 1997.

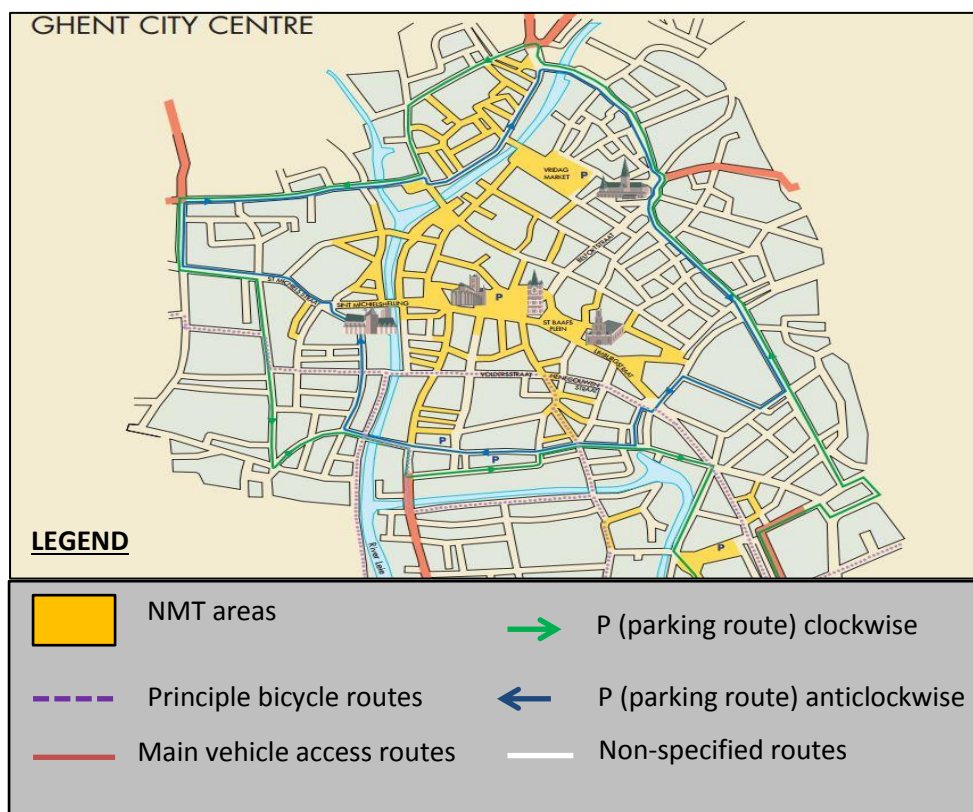


Figure 14: Ghent city centre transport plan of 1997

Source: Wallström (2009)

Since the implementation of the non-motorised CBD strategy (Ghent Mobility Plan, 1997) the city has enjoyed a revolution in specifically cycling levels through a sustainable package of investment in marketing and investment. The city focused on promoting cycling specifically as the main mode of transport and won a 2012 Eurostar Ashden award for sustainable travel for its active support for

cycling (Anon., 2012: 1-3). Direct comparisons of transportation data before and after the implementation of the Mobility Plan, 1997, can, however, not be made, as no transportation data were captured before the implementation of the pedestrianised CBD (Wallström, 2009: 41).

According to Vansevenant (Director of the Mobility Service, Ghent), “some of the vehicle traffic was displaced to neighbouring streets with the implementation of the pedestrianised CBD, the other however seems to have disappeared. The traffic congestion that was predicted did not occur. Although traffic increased in some streets around the pedestrian area, this was really only a problem during rush hours, but this problem existed before the introduction of the pedestrian area.” He continued by stating: “While some groups, most notably some retailers, continue to oppose the scheme, the implementation of the mobility plan is regarded as a success by resident and visitor. Despite some criticism at the beginning, the large pedestrian area in the inner city has created a pleasant and lively city centre. A lot of events (open-air arts festival, open-air music events) are now possible in very fine surroundings. The atmosphere for shopping is now better as well, as no cars can possibly bother shoppers.” (Wallström, 2009: 41.) The figure below indicates streets in the city Ghent, Belgium.



Figure 15: Streets in Ghent, Belgium

Source: © Google 2013

The best-practices regarding the development of a non-motorised area based on the Ghent case study could be summarised, from the above content, as follows:

- City management accepted responsibility that they were the creators of the urban problem (as a result of private vehicles) and took decisive action to rectify the situation.
- A non-motorised transportation system can only be fully functional if an adequate public transportation network exists. As a result of the Mobility Plan the city accommodates pedestrians over short distances, cyclists over medium distances and public transportation where NMT was not possible to utilise long distances.
- Parking routes were developed to surround the pedestrianised area, thereby ensuring that the area was still accessible via the private vehicle.
- The CBD (pedestrian area) was renovated to be attractive and functional on a human scale.

5.3. Pedestrian mall studies

According to the Oxford Advanced American Dictionary (Oxford advanced American dictionary. 2011) a pedestrian mall in the United States of America is defined as “a part of a town, especially a shopping area that vehicles are not allowed to enter”. Schmidt (2010:1) defined a pedestrian mall as follows: “A pedestrian mall is characterised as a number of blocks of public downtown streets designated for pedestrian-only use and close to vehicular traffic.”

As previously stated, these forms of development were chosen as they represent the research incorporated in this study, as follows:

- Pedestrian mall developments incorporate New urbanism and Smart growth principles, but the emphasis is firmly placed on generating “a walkable city” – a principle included in both theories.
- Pedestrian mall developments are a result of implementing New urbanism and Smart growth principles.
- Pedestrian mall developments are specific to the CBD of a city.
- Pedestrian mall developments are transportation-specific non-motorised developments.
- Pedestrian mall developments are mostly planned in traffic-congested central business districts and consequently in countries with a high private vehicle usage, e.g. the United States of America, Canada and Australia.

Smith (2007:560) points out that several hundred towns and cities in the United States of America converted their main streets into pedestrian malls in the 1960s, 1970s and 1980s in an effort to bring shoppers back to older downtown (CBD) areas, and to improve the management of downtown traffic congestion. Furthermore, Smith (2007) states that Victor Gruen was the professional who

planned the first pedestrian mall for the CBD of Kalamazoo, Michigan, in 1959 and would go on to plan many successful and unsuccessful pedestrian malls in the USA.

The Kalamazoo pedestrian mall was located in one street only (Burdick Street) and was two blocks long. Like other pedestrian malls that were later developed it accommodated retail-specific shops in an area only accessible to pedestrians (Rzepczynski, 2009). The plans of Gruen were based on the plan he had for Vienna, Austria. His vision was to have pedestrian-only areas in the central business district, surrounded by loop roads containing parking garages with enough space for all those that needed to access the centre (Rosen, 2006:7-8). The figure below illustrates, simplistically, the vision of Gruen regarding pedestrian mall developments.

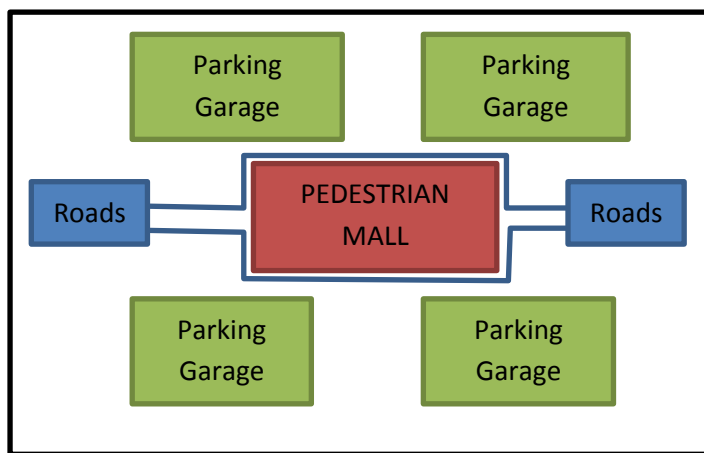


Figure 16: Victor Gruen's pedestrian mall layout

Source: Own construction (2013)

The development of a pedestrian mall became so popular in the USA between 1959 and the 1980s that more than 200 towns and cities implemented the development. However, by the year 2005 fewer than two dozen remained as they were reopened for vehicle traffic (Schmidt, 2010).

The following reasons were provided for the unsuccessful developments of pedestrian malls in the USA (Schmidt, 2010:3) & (Rosen, 2006:10):

- Indoor malls located close to highways lured residents away from the CBD.
- Middle-class suburbanites did not enjoy the inconvenience of traveling to a city's CBD or the diversity of people that frequented it.
- The CBD accommodated old-fashioned stores whilst suburban indoor malls catered for the newest fashions.

- The rapid decline in transit ridership with the implementation of the highway system. This resulted in the two busiest streets no longer being in the CBD but on the periphery of towns and cities where indoor malls quickly developed.
- Urban decay pushed shop owners and customers away from the CBD.
- Most planners agreed that the pedestrian zones were too large. Without cars, the broad rights of way in western cities are a vacuum that cannot be filled with additional non-motorised uses.
- Too few outdoor activities took place, e.g. outside cafes.
- Few activities were available after dark, which had an influence on the safety of these developments.
- People were already comfortable with their car-orientated suburban lifestyle.

Although the above explanations are relevant, the main reason can be attributed to the outcome wished for by the planners of these developments. The failed pedestrian malls were implemented to compete directly with suburban indoor malls and to lure shoppers back to the CBD and preserve businesses (Schmidt, 2010:4). This strategy differed sharply with the extremely successful implementation of European traffic-free zones which opted to conserve the CBD and improve residential downtown residential conditions (Schmidt, 2010:4).

The success in Europe can also be contributed to the following aspects which differ from their American counterparts (Smith, 2007:564):

- The CBD in Europe consist of a higher mixed land use percentage which results in more workers and residents close to the pedestrian malls.
- Zoning regulations and policies in Europe promote mixed land use practices whereas American regulations and policies promote the separation of land uses.
- European cities are generally better served by local and inter-city public transportation than cities in the United States of America, making it possible for more people to reach the CBD without cars.
- European city centres are more likely to provide an inclusive range of basic consumer goods and services than city centres in the USA where most functions migrated to suburban malls.

The planners of a handful of pedestrian malls that had proven to be successful in the United States realised that pedestrian malls would not be the anchor that lured shoppers to the CBD, but would serve as the thread to link popular eateries, stores and other attractions (Schmidt, 2010:4).

The Third Street Promenade, Santa Monica is an ideal example of a pedestrian mall. A pedestrian mall was developed to counter the declining activity experienced in the 1960s but the

underperforming mall's final blow came from the development of an indoor mall at the southern end of the pedestrian mall in 1974 (Rosen, 2006:15).



Figure 17: Third Street Promenade Mall, Santa Monica

Source: Own construction using ©2013 Google.

Determined to turn around the future of the pedestrian mall, professionals and residents came up with a plan in the 1980s to revitalise the area. Some of the core elements of the plan that established the 3rd Street Promenade as arguably one of the best pedestrian malls in the country (USA) were to provide shoppers with “something to eat, something to drink, something to see and somewhere to go”. Rather than concentrating on a retail mix to compete head-to-head with the indoor mall, the city took a different route and concentrated on entertainment (Rosen, 2006:15).

The figure below illustrates the Third Street Promenade.





Figure 18: Third Street Promenade, Santa Monica

Sources: Santa Monica Chamber of Commerce ©2013

5.3.1. Pedestrian mall developments

Schmidt (2010) is of the opinion that the pedestrian mall is gaining popularity again in the United States, but this time the motive for developing these vehicle-free areas is to promote sustainability, healthy living and to get people out of their cars; resulting in the creation of sense-of-place. The expected outcome is in steep contrast with the previous perceptive behind the development of the pedestrian mall which was to save a dying CBD (Schmidt, 2010:3).

People that visited pedestrian malls were asked to provide feedback on their experience and an overwhelmingly positive feedback was received in all evaluation of present malls. The following table provides the results. It is clear from the reviews received that an overwhelming majority rate developments as “excellent”.

The table below provides detail regarding feedback received.

Table 15: Experience of pedestrian mall visitors

City	Development	Feedback	Feedback		
			Excellent	Average	Poor
Santa Monica, CA, USA	3 rd Street Promenade	1053 visitors	87%	11%	2%
Boulder, CO, USA	Pearl Street Mall	401 visitors	90%	8%	2%
Denver, Co, USA	16 th Street Mall	344 visitors	65%	21%	14%
Melbourne, Australia	Bourke Street Mall	390 visitors	88%	10%	2%

Brisbane, Australia	Queen Street Mall	61 visitors	93%	7%	0%
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Source: Own construction based on Tripadvisor (2013).

The best-practices regarding the development of a pedestrian mall (non-motorised area) internationally could be summarised, from the above content, as follows:

- Parking garages should be developed adjacent to a pedestrian-only area to ensure accessibility for residents using private vehicles.
- Unsuccessful pedestrian mall developments competed directly with indoor mall developments, whereas the more successful developments concentrated on conserving the CBD, improving residential conditions and developing activities that attract a large number of residents. The motto of the successful Third Street Promenade development was: “something to eat, something to drink, something to see, somewhere to go”.
- A high percentage of mixed land uses in the CBD ensured a better chance of success for pedestrian mall developments.
- A great public transport network ensured a higher success rate with regards to pedestrian mall developments.
- Pedestrian mall developments are gaining popularity in the USA again, with the focus specifically on sustainable development and healthy living.

5.3.2. Pedestrian mall developments in South Africa

Pedestrianised or car-free zones in South African cities are rare and single cases exist, most notably St. George’s Mall in Cape Town’s CBD. Prinsloo (2005) explains that the focus of these malls was on creating a pedestrian walkway, linking retail facilities on street level and creating an attractive environment with natural elements. He continues by stating the most successful malls are linked to important anchor areas or tenants forcing people through the mall. They are also located in the metropolitan CBDs where large pedestrian volumes exist (Prinsloo, 2005).

The Cape Town Partnership (2009) reports that only 7% of journeys in Cape Town are made on foot and that St. George’s Mall was pedestrianised in 1992, ensuring that those that live in or close to the city centre are guaranteed a short walk to work.

Limited additional information regarding pedestrian malls in South Africa exists. The success of the St. Georges mall can be attributed to the fact that it is still a pedestrian-only area, tenants still rent floor space and residents still visit the street.

The following figure illustrates St. George's pedestrian mall within the CBD of Cape Town.



Figure 19: St George's Mall, Cape Town

Source: Own construction using ©2013 Google

The best-practices identified regarding the development of a pedestrian mall (non-motorised area) in South Africa could be summarised from the above content, as follows:

- It should be linked to important anchor areas or tenants forcing people through the mall.
- The development should be located in high volume pedestrian areas.

5.4. Conclusion

The conclusion summarises, firstly, the most successful aspects and secondly, in Table 16, the best practices of each non-motorised development.

Copenhagen, Denmark:

- Various merchants reported sales increases of between 25% and 40% as a result of pedestrianisation.
- Strøget Pedestrian Street is between 10 m and 12 m in width and accommodates pedestrians equal to the most travelled highways in Denmark in a 24 hour time period.
- Gradual transformation of the CBD into a pedestrian area took place.
- Parking bays were gradually reduced; the city functions perfectly with minimum parking spaces.
- The biggest change came in the number of residents residing in the CBD. A constant correlation measured from 1968 to 1995 was that for every 14 m² (or parking bay) transferred from vehicle to pedestrian space, 1 person settled down in the CBD.

Ghent, Belgium:

- The first step to a better Ghent was the municipal management accepting that a mistake was made regarding planning and the transportation systems implemented, and that it should immediately be corrected by introducing new strategies.
- After vehicles were removed from the CBD, accessibility to the CBD for vehicle owners remained high due to the development of P-routes (parking routes) with access to underground parking garages.
- The CBD was redesigned to be more attractive and provide a sense-of-place to its residents.
- Traffic rules and regulations were strictly enforced.

Pedestrian mall developments:

- Notwithstanding the exclusion of vehicles in the pedestrian mall development, accessibility via vehicles remained high with the planning of parking garages in the surrounding areas.
- In order for pedestrians, who do not own a vehicle, to travel long distances public transportation is necessary. To ensure a successful pedestrian mall development connection points (bus and rail stations) must be within walking distance from the pedestrian mall development.
- Residents are used to the status quo and current operations of the city. Any new developments, including pedestrian mall developments should therefore be phased-in.

The following table compares the best practices of each pilot study examples and indicate which examples were shared.

Table 16: Comparing best practices derived from the pilot study examples

Best Practices	Copenhagen, Denmark	Ghent, Belgium	Pedestrian mall developments, international
Key	✓ - Relevant	✗ - Irrelevant	
Measurement of data, before and after the implementation of the pedestrian-only development in the CBD.	✓	✗	✗
The implementation of the pedestrian-only development was phased in.	✓	✗	✗
The pedestrianisation development was implemented where high traffic volumes (pedestrian and traffic) existed.	✓	✓	✓
Outdoor public spaces were developed into activity hubs.	✓	✓	✓
A high percentage, of mixed land uses, was a result of pedestrianisation.	✓	✗	✗
A high percentage of mixed land uses ensured a better chance of success for a pedestrianised development.	✗	✗	✓
The pedestrian-only area was renovated and planned on human-scale.	✓	✓	✓
An adequate public transportation system was developed.	✓	✓	✓

Facilities were developed to accommodate motorised vehicles adjacent the pedestrian-only development.	x	✓	✓
Pedestrianisation takes place in order to counter urban problems and improve sustainable development.	✓	✓	✓

Source: Own construction (2013)