
**“An application of ‘Universal Design’ as a practical approach to
‘Disability Policy’ in South Africa: towards planning that meets the
needs of all residents: case of *Umlazi-Durban*”**

By

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November, 2003

DECLARATION

EXCEPT FOR QUOTATIONS SPECIALLY INDICATED IN THE TEXT, AND SUCH HELP AS I HAVE
ACKNOWLEDGED – THIS THESIS IS WHOLLY MY OWN WORK AND HAS NOT BEEN SUBMITTED
FOR A DEGREE IN OTHER UNIVERSITY.

SIHLE GODFREY KALOYILOI NDABA

NOVEMBER, 2003

DEDICATIONS

This work is dedicated to –

My parents

And,

Friends of My Family

ACKNOWLEDGEMENTS

The author wishes to express his thanks and appreciation to the following people/organisations:

- My Supervisor, Professor M. Kahn. His devotion and time in supervising this work, is herein appreciated: you have always expressed your views, like a 'Dutch Uncle.'
- The Planning Staff, who, without any complaints, dedicated their valuable time in teaching, so that I may be saved from being a 'member of the deprived nations,' and become a 'full member of the free nations.': your contribution is highly appreciated. Here, I am talking about Professor Allison Todes, Professor Peter Robinson, and Miss Nancy Odendaal.
- Disabled People South Africa (DPSA) and all its partners, for giving me valuable information on disability issues.
- All 'disabled' citizens who participated in this work.

My mother told me that, one way of achieving 'justice,' in one's 'innermost layers of being,' is to mention great names, with a measure of honour and appreciation. This space, in my work, is dedicated to:

- Bonginkosi K. Ntuli, my old fellow, with whom I have spent six years of studying in this Institution of High Learning. When we first met in front of Howard College – 9 February 1998 – it was a case of humble beginnings. Yes, it was the meeting of the 'true Masai.'
- Mlungisi Hlubi, with who I have studied (my) LL.B: one of our strengths is to make every minute, one of 'intellectual blood transfusion.' Your positive influence, in my life, is highly appreciated in this regard.
- Sipho Nkosi, the great African son, who, without any complaints, lessoned to my cry when I could not penetrate the 'brave face' of the eThekweni Municipality.
- Trivishan Arjunan, Mava Ntanta, Sisi Ntsiki, Mandisa Zondo, and Mpho Zungu, and all my classmates (2002-2003) – you have been great people of all times
- Noluthando Gobingca, for 'extra' love and emotional support.

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CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

“A city is composed of different people; similar people cannot bring a city into existence” (Aristotle –quoted in Ungar, 2002: 12).

The recognition of ‘difference’ in the city is not a novel issue. It has been with us even before the launch of the Magna Carta – the oldest human rights document in the world. Already in the 4th century BC – Aristotle recognised and welcomed ‘difference’ in the people who populate a city. His opinion was that difference was a necessary and positive factor in the life and functioning of a city. However, Aristotle may have expressed his sentiments in a rather different context to which this research locates. The difference in this case is that of “disability”. Now, are the communities within which we spend our lives prepared to accept this ‘deference’? This is, indeed, a Herculean task – forcing us to realise that by denying ‘difference,’ some sections or groups of our society, *or may be, us all*, are exposed to certain ‘barriers’. Thus,

“Disabled people can only be integrated in space if society recognises that space impedes and then goes some way to providing remedies” (O’Brien & McFetridge, 1991: 153)

Notwithstanding the fact that ‘difference’, as an important element in the society, even though it was not entirely associated with human beings, was generally recognised some million years ago – many of the inequities for people with disabilities are still defined by the built environment. By setting physical standards for the buildings, communities’ transportation patterns, and community rhythm – planning has, to a particular extent, defined unnecessary limits, which restrict the activities and the quality of life of many members of the community (Stoddard, 2002). The community attitudes and physical barriers in the built environment have prevented people with disabilities from fully participating in society. The design of our surroundings affects ‘our’ daily lives. Inappropriate and poorly considered design solutions can result in reduced

safety, great daily physical and mental strain and limited possibilities for activity (Norwegian Ministry of environment, 1998). Consequently, for disabled people, the provision of public services and the design of the built environment can be a crucial determinant of participation (Kitchin & Law, 2001: 288). Through recognition that people have different abilities and disabilities – and that ‘disability’ is, in the social model, viewed as being the product of a disabling society, not the individual pathological body – it has been succinctly observed that:

“The built environment is basically designed for the average human being, plus or minus half a standard deviation. From the perspective of a well-shaped curve, persons with many types of disabilities that place them in the tails of the distribution are effectively isolated by their environments” (Hahn, 1986: 273)

“...In contrast, most design disciplines have traditionally defined the “user” or the “public” (in the case of urban planning), in very narrow terms based on a conception of the user/citizen, which is inherently masculine, and the “public” which tends to be made up of middle class white people living in nuclear families” (Weisman, 1999: 4).

So, when planners and other design professionals attend to the provision of housing, transportation, and community services, they have tended to design and plan for only a small segment of the population, thereby creating many problems for the ever increasing numbers of people who do not fit into this assumed definition and life pattern.

Suffice it to say that – it is no accident that the built environment has become such a focus of attention within the disability movement, for it is their interaction with the built environment that disabled people have found the strongest expression of their exclusion from society ‘at large’. They dispute the ‘naturalness’ of the built environment and the idea that it is simply an objective reality, which must be negotiated by disabled people (Ungar, 2002: 5). Hahn, a disability scholar, has argued quite strongly against the so-called ‘naturalness of built environment’, and has observed that, “the many problems, which disabled people must confront, are mainly located in what he valuably terms ‘disabling environment’. In this sense, the

environment is always constituted in shifting power relations rather than being immutable, natural or given” (Hahn, 1988: 40).

There has been an increasing realisation that the built environment can be adapted to accommodate a broad range of human abilities and disabilities. Although relatively little attention has been focused on this issue in architecture or planning (*design disciplines*), the prospect of designing a city in which all residents – regardless of their bodily capacities – would be given an equal opportunity to seek a satisfactory life seems well within the reach – if not the grasp – of modern endeavour (Hahn, 1986: 273).

However, the creation of a truly ‘*universally accessible*’ (or ‘barrier-free’) environment in which all people may move through and use all public spaces remains a distant goal – and implies a far greater integration of residential, educational, commercial, recreational, and transportation provision (Imrie & Wells, 1993b: 279; italicised – my emphasis). This neglect is partly attributable to ignorance, to the view that the disabled are a minority segment of the population with ‘specialised’ needs. However, if a wide definition of disability is employed, it may be that the majority of the population have some problems in negotiating the built environment (Imrie & Wells, 1993b: 278).

The South African citizens who are disabled are no exception to the problems raised above. The South African Human Rights Commission (SAHRC) has recognised the problems experienced by disabled people in their attempts to negotiate the built environment (SAHRC Report, *Towards a barrier-free society*, 2002). Therefore, this research looks at three categories of people with disabilities – wheelchair users, visually impaired people, and blind people. Because of ageing disability, it becomes necessary that the elderly people be also (indirectly) considered in this research. Their problems are directly linked to the ‘disabling built environment’. Planners and other professionals involved in the design of physical environment have the opportunity, and the challenge, of seeking design solutions that reduce environmentally created inequities and barriers (Stoddard, 2002), and create universally accessible environments. While the South African constitution is billed as one of the progressive constitutions in the world – however, law alone will not change the existing realities

that are facing the disabled people in South Africa. These realities cannot be hastily generalised – they vary according culture, race, gender, and age. They are also informed by whether one comes from a rich family or poor family. The problems associated with an inaccessible built environment cannot be successfully solved if the disabled people themselves are not part of the planning process – the process that determines where they live, where they buy bread, how they cross the busy roads, which pathway to take, etc. While this dissertation purports to claim that the built environment can be designed or planned ‘for all’ without necessarily employing *ad hoc, stigmatising specialised solutions*, it is no ‘panacea of all planning ailments’. Even though this research has provided a general introduction, it locates itself within the planning perspective. However, design disciplines cannot be separated (and should not be). In fact, this dissertation advocates “Inter-professional planning process”. The main arguments advocated in this research are summarised below (see 1.1.1).

1.1.1 The Main Arguments Advocated in this Research

The main argument advocated in this research is that the physical environment can be designed in such a way as to accommodate a wide array of possible abilities and disabilities. Planners and other design professionals should move way from the so-called “*designing for disabled people*” to “*designing for future selves*”. The dichotomy of “*we-they*” should be dismantled in favour of “*design for all*”. The creation of an urban environment adapted to the needs of everyone is not a utopian vision – it is an objective that communities must strive to fulfil and a concrete as well as theoretical possibility that appears worthy of major effort. In fact, probably the principal obstacles to the attainment of this goal are the limitations of the imagination, which are more debilitating than the restrictions allegedly imposed by physical or other disabilities (Hahn, 1986: 273).

The second argument is that the traditional, piecemeal method of designing for each small and unique group with different and specific needs is often impractical because there is such a wide variety of different needs, and people’s needs change day-to-day or as they age. And other non-disabled or ‘temporary able-bodied’ people might be compelled to face the prospect of living at least a

portion of their lives with a disability. As a result, the design of ‘universally accessible’ environments has important implications for everyone and not merely for a limited segment of society (Hahn, 1986: 276-277). Most of the features needed by people with disabilities are useful to others, and there is, therefore, a *raison d'être* to make their ‘inclusion’ – the ‘design for all’ – a common practice. The tendency to view designing for ‘disabled people’ as an isolated, and may be, thinking about as a separate group, instead of a spectrum of human-environment interaction, must become part of the planning history.

The third argument (related to the above) is that there is a great need to replace prior stereotypes and misconceptions about the traits and capacities of ordinary persons that have appeared to guide the design of the built environment. The *clarion call* here is that, planning ought to be shaped by the principles of ‘universal design’, which would seek to accommodate women and men with a wide range of capabilities, or by the concept of individualisation, which implies an environment adapted to the needs of everyone (Hahn, 1985a – cited in Hahn, 1986: 288). ‘Universal Design’ should be a concern to everyone although it is especially important for architects, planners, engineers, project funders, decision-makers, advocates, and others (Waterloo Region Trends Research Project, 2001: 12). Some of our planners are already aware of this Herculean task – some are aware of other ‘good design principles’, apart from ‘universal design’ – however, the approach in this case is to emphasise the element of ‘disability’, of ‘universality of design’, in the design and planning of different land uses/facilities. This dissertation extends the boundaries of ‘general planning’ to include ‘voices from the borderlands.’

So, how do we go about designing universally accessible environments? Clearly, the current ‘model of access’ in South Africa is inadequate. It is firmly based on a medicalized view of disability, where the built environment is seen as ‘normal’ or ‘natural’ and *ad hoc* modifications are made to particular buildings/street in response to the impairments of particular users. These tackled-on additions form discrete responses to particular diagnostic categories: a separate environmental ‘fix’ for each impairment. This piecemeal approach

has often led to conflicts between adaptations for different impairments, for instance, dropped kerbs to facilitate road crossing for wheelchair users may engage blind people who depend on sharp kerbs to detect the edge of a pavement (Ungar, 2002: 13).

The fourth argument calls for a *general shift in planning*. In preparing designs for urban environment, planners might seek to diminish segregation and discrimination by increasing rather than decreasing the proximity of disabled and non-disabled people. Extensive experimentation may be required to achieve the optimum combination of segregating and integrating influences in environmental design. Although technology has played a critical role in the everyday lives of many individuals with disabilities, perhaps even more significant and crucial is the need for changes in the approach to planning the built environment (Hahn, 1986: 287-288). Good accessibility for the disabled people, *for us all* – calls for awareness in general planning and detail of physical design. This particularly applies to land-use and town planning, where accessibility and quality for user groups may include everything from arranging pedestrian areas to location of residential areas (Norwegian Ministry of Environment, 1998).

The fifth argument is related to costs associated with ‘development and universal design’. Some critics have argued that ‘universal design’ increases costs both in retrofitting existing barriers, and in new developments i.e. the ‘disability issue’ increases costs in an already burdened economy. In the short term, however, there may be some situations in which designing for everyone may cost more or may seem to constrain the design. In these cases, the rationale for using universal design is either that the short-term cost is worth the long-term return, that universal design reasonably increases the value of design, or that there is an ethical bottom line rather than an economic one. The extremists might say – if you consider equity, not economics, these are the costs of correcting series of old mistakes. It is the cost of setting standards based on a ‘norm’ that leaves people out of the process and out of the buildings, buses, social, and economic processes. This research does not

attempt to adopt the 'blanket denial' of real issues of costs. May be, it is about 'honest and committed' prioritising within the design and planning of physical environment.

This dissertation recognises that, in order to accommodate disabled people in the built environment, they should be considered in both Greenfield (new) developments and retrofitting context. Many of the barriers, particularly those related to broad land uses, cannot be reversed through retrofitting. Umlazi (case study) is, therefore, used as a 'learning point' in terms of what should be and should not be done in future developments.

1.1.2 Positioning the Researcher

Even though I do not perceive myself as a disabled person – however, I have repeatedly observed that one does not need to have an impairment for him/her to be disabled. One could be an 'able-bodied person' – but everyone is likely at some time / stage in life to feel the disadvantage of having to negotiate the environment that is designed for the 'well-serviced walking-machine'. When you are exhausted, sick, elderly, and you have to go to shop that is located some 15-20 minutes-distance or have to negotiate the high steps – that would probably be a day that you would realise that you are a 'disabled person' – disabled by the environment; that would be a day that you would realise that you are a planner yourself. Regardless of whether or not we see ourselves as non-disabled people, it is, indeed, a misfit between ourselves and the environment that everyone should be concerned about – and not whether Mr X broke his legs – and, is forever confined to a wheelchair – thus labelling him as a 'disabled person'. His personal impairment is not *per se* a disability, but the disabling environment becomes his 'disability'.

We are not planning for the disabled, but planning for future selves: this is the answer I will give to a disabled activist / academic who will attack me of hijacking the 'platform' of disability. Therefore, this is a work of a 'disabled able-bodied

person'. The slogan "*nothing about us, without us*" does not apply to the researcher – but to someone who plays an advocacy role on behalf of 'us'.

1.2 PROBLEM STATEMENT

The South African 'Disability Policy' inherently directs planners and other professionals involved in the planning of built environment (public facilities and/ or land uses) to take reasonable measures to create *universally accessible* or 'barrier-free' environments that accommodate the diversity of needs, and enables the entire population to move around freely and unhindered – but, the policy objectives have not as yet been, and could hardly be, transformed into concrete realities for 'disabled people.' This is partly exacerbated by the application of poorly considered design solutions.

Among different groups identified as 'disabled people', many problems of wheelchair users, visually impaired people, blind people, and elderly people are directly linked to a 'disabling physical environment': Disabled people require an 'accommodation' in built space and facilities for mobility. They are particularly disadvantaged in using transport services and gaining access to the built environment, which includes – at a local level (neighbourhood), parks, shops, schools, libraries and bus stops, and, at community-wide level, large parks, larger shopping facilities, and clinics/hospitals. Access to housing is also a concern for 'disabled people'. They are facing many day-to-day difficulties in mobility. This directly deprives them of opportunities in using any public space and facilities, viz: –

- The *public transport*, particularly buses and taxis are generally not accessible to wheelchair users, visually impaired people, and blind people, and, this 'group' is not able to travel regardless of the purpose of the journey, and as a result they are not able to participate fully as members of the society. They are not able to access bus stops, bus stations and termini. Thus, this group is among people who are often referred to as 'transport-disadvantaged group'.
- The development of *housing* in steeper terrain poses barriers to wheelchair users because of low mobility, in particular. Areas based on mobility by car are less

usable by people who do not use a car. Areas on steep terrain sited some distances from public services, are also barriers.

- Poorly designed kerbs, road crossings, movement patterns between levels and resting places restrict freedom to move about the street in other pedestrian areas, particularly for those using wheelchairs, or with visual disabilities.
- Shopping precincts and places of higher order facilities ought to offer a much-improved environment for disabled shoppers or disabled facility users.
- Lack of proper signage, sensory and auditory information makes the environment confusing particularly in shopping precincts and places of high order facilities.

1.3 RESEARCH QUESTION

In the light of the current ‘disabling physical environment,’ the question is what could possibly be a practical response to ‘Disability Policy,’ so as to ensure that wheelchair users, visually impaired people, and blind people are accommodated, to a greatest extent possible, to both local and community-wide facilities/land uses (i.e. built environment).

1.4 SUBSIDIARY QUESTIONS

The subsidiary questions that elaborate the main question are:

- What does ‘disability policy’ say about disabled people in relation to (in)accessibility of both local and community-wide facilities / land uses (built environment)?
- What is the nature of ‘disabling environment’ in Umlazi-Durban?
- What is the impact of ‘disabling environment’ on the daily activities of disabled people?
- Assuming that there is a consensus about the impact of disabling environment on the daily activities of ‘disabled people’ – do ‘disabled people’ have the same experiences with regard to ‘disabling environment,’ or it also varies according to gender, race, and affluent and poor people, etc.

- To what extent does the current design principles employed in the planning of the physical environment promote or restrict an accessible physical environment?
- What are the reasonable design solutions that could possibly be introduced so as to create ‘universally accessible’ environments’?
- In cases where disability is not interpreted as an ‘event’ – and thus, seen as a pattern of change throughout the life span, why then is there a tendency to view designing for ‘disabled people’ as an isolated, and may be, thinking about as a separate group, instead of a spectrum of human-environment interaction?

1.5 HYPOTHESIS

The poor planning of public facilities and /or land uses, both at local and community-wide level, that does not meet the needs of all residents, often excludes disabled people from a mainstream society, and thus, participating as full members of the society, and, the application of ‘Universal Design’ in the planning and design of built environment could be a possible practical approach to ‘Disability Policy,’ so as to translate disabled people’s concerns into concrete realities in South Africa.

1.6 CHAPTER OUTLINE

Chapter 1 introduces the whole dissertation and presents the main arguments advocated in this research.

Chapter 2 explains the social research methods used to collect data.

Chapter 3 sets out the main theories and/or concepts that inform the research.

Chapter 4 sets out the legal framework relating to the South African law that governs disability, accessibility, and the built environment.

Chapter 5 introduces the case study: it sets out the context and status quo.

Chapter 6 analyses the data collected through the use of social research methods explained in the methodology section of this work.

Chapter 7 synthesises the findings of the research i.e. application of the theories and concepts to the case study.

Chapter 8 contains recommendations of the research.

Chapter 9 contains the main conclusion of the research.

CHAPTER 2: RESEARCH METHODOLOGY

“Disabled people have come to see research as a violation of their experience, as irrelevant to their needs and as failing to improve their material circumstances and quality of life” (Oliver, 1992: 105).

2.1 INTRODUCTION

The aim of this chapter is to explain the social science research methods employed for the purposes of data collection. The reasons are given as to why they were chosen, as well as the type of sampling employed herein. The reasons for the selection of Umlazi as the case study are also given. Lastly, it also explains the purpose of the study. The chapter also acknowledges that each research method has its own advantages and disadvantages.

2.2 SELECTION OF CASE STUDY

It is imperative to start by explaining why Umlazi was chosen as a case study. Umlazi has been chosen as case study for many reasons. The history tells us that Umlazi is a product of *apartheid planning* – in its forging of the apartheid city. Many anomalies of planning could be identified in the case study. Umlazi was never planned as a quality urban environment in which people could live, but as a dormitory town for the storage of cheap labour to be used in the southern industrial area, when required. Such an environment has certain implications for disabled people. Many of the issues raised here would also apply to other areas, particularly those that are ‘products’ of apartheid planning. Umlazi has been identified as a clear example of an area not planned for all people. It also made sense that the research be conducted in an ‘African area’ because of the lack of sufficient facilities, high level of poverty, etc. – which partly determines how one would cope with ‘disability’. Umlazi has centres for disabled people, which also made it easier for the researcher to locate ‘disabled people’ at little cost. Another reason for choosing it is related to the ease with which the researcher could access

information and informants. Related to this is the researcher's knowledge of the area, which cannot be denied in this regard.

2.3 PURPOSE OF THE STUDY

By and large, the study sought to investigate the *nature of the disabling environment* and how it affects wheelchair users, visually impaired people, blind people, and elderly people. It was also critical to investigate whether or not the area was planned in a manner that accommodates the needs of all residents. But central to this investigation was to identify three aspects – which included the *locational aspect of facilities, the detailed design of facilities, and the accessibility of the facilities, including transport facilities*. All these three aspects informed the researcher's investigation of the '*disabling barriers in the built environment*', and how they actually contribute to the exclusion of disabled people from the mainstream society.

2.4 SOCIAL SCIENCE RESEARCH METHODS

There are various methods that one can employ to undertake a research and data collection. In practice, the nature of a research will often determine the most appropriate method to be employed. In this study, both secondary sources and primary sources (i.e. qualitative and quantitative methods) were used. And there are reasons for this decision. As a general principle in research methodology – it is always advisable to first consult the secondary sources that will inform one's research, and then goes some way to consulting the primary data sources.

2.4.1 Secondary Sources

The following secondary data sources were consulted as part of preliminary investigation to the study:

- *Articles*
- Reports
- *Papers*
- *Books*

- *Journals*
- *Internet resources*
- Legislation

The italicised sources (*supra*) grouped together – were used to “kick-start” the argument. These sources range from the *theories of disability; disability and the disabling environment, to planning/ design principles/ concepts*. They illuminated thinking and the route to be taken in research. However, certain sources deserve special mention.

The works of the following authors provided the researcher with the *theoretical platform* for the research. These authors are leading scholars in disability studies, and their works are *loci classici*:

- Harlan Hahn
- Michael Oliver
- Deborah Marks
- Tom Shakespeare
- John Swain, Vic Finkelstein, Sally French
- Collin Barnes

The following sources cemented the researcher’s understanding of planning principles and concepts. The work by Aslaksen (*et al.*, 1997) made the researcher fall in love with the concept of “Universal Design”. Ron Mace – the father of “Universal Design” – is cited in Aslaksen’s work (see below).

- Finn Aslaksen, Steinar Bergh, Olav Rand Bringa, and Edel Kristin Heggem. (1997)
- Roger Behrens & Vanessa Watson (1996)

All of the above works are cited in the Bibliography section of this work.

The South African Human Rights Commission (SAHRC) Report: *Towards a barrier-free society*, 2002) also deserves special mention. The report acknowledges the problems that the ‘built environment’ imposes on disabled people, and thus,

proposes legislative amendments to the current legislation governing the accessibility and built environment.

The South African Legislation reports were also consulted to determine what rights disabled people have. The South African Legislation governing the accessibility and built environment is discussed in chapter 4 of this work. When disabled people are trapped outside buses, buildings, etc. – it becomes a human right issue. By virtue of the hiatus that exist in the current legislation, the American legislation (ADA), UK, and Australian were consulted. The SAHRC Report has acknowledged that these countries' legislations are 'water-tight,' and far more advanced than the South Africa's.

2.4.2 Primary Sources

2.4.2.1 Interviews

(a) Key Informant Interviews

The aim of the Key Informant interviews is to obtain special knowledge on a given topic (Mikkelson, 1995). A number of Key Informants were interviewed. The reasons for each interview are given below.

The Disabled Women Development Programme (WDP) Chairperson [KwaZulu-Natal Provincial Executive Committee (PEC) Member] of Disabled People South Africa (DPSA) was the first informant to be interviewed. The DPSA is the umbrella organisation of people with disabilities in South Africa. It was imperative that the DPSA be consulted to know about its role in addressing many problems that are facing disabled people in the built environment. The broad loosely structured questions were asked. This involved investigating whether or not the DPSA is doing anything to make sure that the planning and the design of facilities / land uses, including transport facilities, adequately accommodate the needs of disabled people. It was also critical to know about the level of

influence or involvement the DPSA has in the planning/ design of the physical environment. Related to this question, in case they have any influence, whether or not it is limited to policy or, it also extends to the actual planning process. It was also imperative to find out about the general challenges in their endeavours to solve some of the problems of *disabling environment*: do they notice any improvement in the lives of disabled people, or they are just fighting the losing battle.

The **Public Relations Officer of eThekweni (Durban) Transport Department** was also interviewed. The majority of the disabled people, especially those from 'African areas' are highly dependent on the public transport, especially buses (and taxis). It was, therefore, important to investigate whether or not the Durban public transport system, particularly buses, address(es) the mobility needs of disabled people, including the elderly people. Related to this question, was to find out, what plans do Durban Transport have in terms of making sure that disabled people do get an unhindered access to buses, in particular. The best transport service for mobility needs of various disabilities is the use of *low floor buses or, buses fitted with hydraulic lifts*. The question was raised – whether they have any of these. If they have – are they adequate to service the Durban community? Are those buses available to the general public, or available for use only by disabled people? If they are not adequate, are they planning to increase the number of the above-mentioned buses? The availability of low-floor buses is not *per se* the only solution – thus, it was also imperative to ask whether or not the transport infrastructure (bus stops, bus termini) accommodates the needs of wheelchair users, visually impaired people, and blind people.

It would have been also very useful to interview the **Chairman of KwaZulu-Natal Taxi Association Council** in order to determine whether or not the Taxi industry accommodates the needs of the disabled people. However, the timing for this research was not

appropriate – It happened at a time when the Taxi Industry was, and is still, at loggerheads with the government about ‘Recapitalisation Project’. During the week in which the interview was supposed to take place, the taxi industry organised a big march in Durban against the Government – KZN Department of Transport, in particular. By looking at the situation, it was felt that the interview would add more fuel on the fire, as the matter was more sensitive. But after reading an address by His Excellency, Deputy President, Mr Zuma, on the International Day for People with Disabilities (3 December 2001), it became clear that disabled people would be accommodated in the taxi transport system. In his speech, he mentioned that, in order for the government to mainstream disability into government initiatives, it had to ensure that the bidders in the Taxi Industry Recapitalisation Project tender stipulate that accommodation for most disabilities will be fully accommodated. But the speech did not explain the ‘how-part’ of it. Therefore, the future of disabled people in taxi transport seems to be in the hands of Government because of the tight control it exercises over the Recapitalisation Project.

In order to find out about the existing situation in the taxi industry, **15 taxi drivers of different associations in Durban**, who have been in the business for a long time, were interviewed to find out, whether in selecting taxi routes – do they consider the mobility needs of disabled people. This question sought to find out about ‘flexibility’ – are they prepared to divert some few metres from the taxi route in cases where the need, or compelling circumstances arise.

A **Divisional Development Planner (Town Planning Department, eThekweni Municipality)** was also interviewed to find out whether or not the town planning adequately ensures that the planning /design of land uses or facilities accommodates the needs of all residents. To investigate that, it was necessary to ask whether there is any formal /criteria for briefs / evaluations for detailed planning to accommodate the needs of disabled people. It was also necessary to

investigate whether or not the planners understand the nature of problems that face disabled people in the built environment. It was also critical to ask about planning guidelines/solutions – whether or not they are clear and unambiguous – so as to ensure reasonable accommodation in the built environment. From the planning perspective, it was also necessary to ask about the level of participation or lobbying needed from the disabled people to ensure that their concerns are adequately addressed.

This work claims that the physical environment can be planned/designed in such a way as to accommodate the needs of all residents, without necessarily introducing a series of ‘stigmatising’ specialised solutions. It became, therefore, critical to ask whether the planners can in real circumstances ‘plan for all’. This question channelled itself to: If the planners can ‘plan for all’ – in what way; what criteria or planning principles should be employed, taking into account the locational /geographical aspects of different facilities, the ‘detailed design’ of facilities, as well accessibility aspect of different locations of facilities. In addition, the planner was also asked if there is any case where the plan was not approved merely because it did not comply with certain standards – if they are any – that safeguards the needs of disabled people, or lack of compliance with the formal instruction in the brief, or in the evaluation process.

Lastly, it would have been also very useful to interview people from the **Department of Transport (KZN)** to find out if they recognize the problem facing the disabled people in Transport (i.e. bus types, location of bus stops, and routes). Because of some reasons – the interview ended in a fiasco. However, through the researcher’ effort, was able to get hold of the speech by KZN Minister of Transport (Mr S’bu Ndebele) at the Launch of Project *SUKUMA* – a pilot project by the Department to provide mobility for disabled people (1 December 1998). This pilot project was/is driven by the Durban Transport Department. The information from Durban Transport interview

confirmed the Minister's Speech on transport and mobility needs of 'transport-disadvantaged people'. From this, most of the questions were answered. The DPSA interview also illuminated most of the questions pertaining to transport issues. Because the key informant interviews were only related to getting a special knowledge, it also became necessary to conduct a Focus Group Interview to supplement the existing data, and also to hear another version of the story, from the disabled people themselves. Below is the section on Focus Group Interview.

(b) In-depth Interviews

In-depth interview with a single individual allows significant probing of a respondent's thoughts and opinions. They can provide great detail. They can also cover the most intimate of subjects, as the face-to-face nature of the interviewing technique allows for a bond of warmth and trust to be created. Four separate interviews were conducted: one each with a wheelchair user; a visually impaired person; a blind person, and an elderly person. The interviews were not detailed as they should have been – because almost all questions were answered in the Survey Questionnaire (see 2.4.2.2 below). Because the majority of the disabled people were 'uneducated' – the survey was conducted in a form of an interview. The questions were conveyed in Zulu, and the researcher would interpret the answer and tick the correct answer in the 'coding' section of the questionnaire. Because of this approach, and the fact that the participants were friendly and relaxed, some answers obtained from certain participants, because of detailed information they provided, were then treated as part of the In-depth interview to save both time and energy. This point is also highlighted in 'data analysis' section of this work (*see* Chapter 6 below).

The In-depth Interviews sought to investigate, in detail, the following:

- What are the identifiable ‘barriers’ in the built environment?
- How does the built environment affect them? (i.e. the way in which different land uses are structured, including the location of different facilities: for example, distances they travel to reach local facilities and community-wide facilities).
- How they cope with steep slopes; unpaved sidewalks; poor lighting on the streets; poor signage, etc
- How they perform their daily activities?
- Because of ‘barriers’, is it possible to have independent living?
- Who is /should be, responsible for ‘universally accessible’ environments?
- What level of participation in planning is needed so as to accommodate ‘their’ needs?
- What is needed, in the environment that could possibly change their lives?

(c) Focus Group Method

The Focus Group Method is one of the various techniques used in *qualitative research*. A focus group is a loosely structured roundtable discussion conducted by a moderator among a small number of respondents, usually eight to twelve people. Participants for the groups are selected on the basis of having shared a common experience.

The participants in this roundtable discussion were wheelchair users, visually impaired people, blind people, and elderly people. The aim of the focus group was to get disabled people together to discuss a specific topic – “*disability and disabling built environment*”. In order to achieve the ‘*universally designed*’ communities, it is always wise to find out about the problems associated with each ‘disability’, and then go on to find out whether or not there are any clashes between them that

might need special attention in planning/design. However, this was not a problem-solving session – but an interview.

The *Sampling method* used for selecting the Focus Group was *purposive sampling*, which means that the selection of the participants follows directly from the purposes of the research project. In this case, as already mentioned above, the research looked at three ‘categories of disability’. It would have been inappropriate to employ the random sampling method – because certain characteristics that generally inform the composition of the Focus Group Interview had to be followed to guide against bias and imbalance in the composition of the Focus Group.

The Focus Group followed the loosely structured roundtable discussion – but subject to reasonable control towards the productive direction. Because of the fact that the experiences of the disabled people are not the same, the following characteristics informed the composition of the focus group:

- *Gender*: male and female, young and old.
- *Race or ethnicity*: whites and blacks (or Indian)
- *Age*: young and old
- *Location or residence*: black townships and white suburbs
- *Education Level*: minimum ‘education’ to understand the issues.
(Personal experiences irrespective of education will also prove to be useful)
- *Income level*: (Poor or affluent).

There were ten participants in the focus group:

- *Three wheelchair users*: one white woman; one black male; and one young Indian girl.
- *Three visually impaired people*: one black male; one black woman; and one young girl (white)

- *Three blind people*: one black male; one black woman; and one white male.
- *Elderly*: one old male (black).

The focus group was not 100% balanced. However, some participants were systematically engaged to play a double role. For example, some were asked about their early years of 'disability' to fill the gap in the 'age' component. The majority of participants were university students. The focus group took place at the Student Union (Dining Hall), University of Natal (5/08/2003)

Initially, the researcher had envisaged two focus groups – the second one to cover people from various organisations of disabled people. However, some of these people had been interviewed separately – and the data collected from each interviewee would be summarised, and be used as the 'basis' for the next interview(s). This exercise helped the researcher to see how each interviewee would respond from other interviewee's story. However, this was not part of the planned interviews, it happened every time the researcher visited (including phone calls/e-mails) the organisations for any help. This was an attempt to use a *Delphi method*. The organisations interviewed included the following: Disabled People South Africa (DPSA); Natal Blind & Deaf Society; SA Blind Youth Organisation (SABYO); Umlazi Disabled & Blind Association (UDABA). The following institutions were also interviewed: Nduduzweni Centre for the Blind and Emalandeni Centre for the Disabled (Umlazi).

2.4.2.2 Survey Questionnaires

The survey questionnaires – the *quantitative method* – were also used to gather information. It was thought that, through this method, the information gathered from 80 disabled people, would be truly representative of the experiences and opinions of the people of Umlazi. The aim of the survey was to gather information about the

experiences of Umlazi people with regard to *barriers in the built environment*. The 80 disabled people comprised 30 wheelchair users; 30 visually impaired people; and 20 blind people.

The *Sampling method* employed in the Survey Questionnaire was *Purposive Sampling*, which means that the selection of the participants follows directly from the purposes of the research project. In this case, as already mentioned above, the research looked at three ‘categories of disability’. The participants were selected based on the following characteristics:

- **Age:** a reasonable spread of age component to avoid bias in the research (see Table 1_Age Cohorts: Chapter 6).
- **Gender:** both men and women, young and old.
- **Educational level:** ‘basic education’ required to understand questions, and be able to answer accordingly.
- **Knowledge of the study area:** disabled people who have the general knowledge of the area.

Initially, it was not intended that the whole of Umlazi be the case study. However, after observing that the disabled people only constitute small segment of the society, and are geographically distributed all over Umlazi – it became difficult to confine the research in the few sections of Umlazi (**P, U, D, Q, S, W and V**). However, these sections are herein isolated as areas of attention. Almost all the sections of Umlazi have similar characteristics.

From the 80 disabled people surveyed, 45 of them were found in the institutions for disabled people. Some of them stay in the institutions, but they have homes in Umlazi, which they visit anytime. Some of them visit these institutions for certain projects, while some of them were there for educational purposes. These institutions/organisations include: Disabled People South Africa (DPSA); Natal Blind & Deaf Society; SA Blind Youth Organisation (SABYO); Umlazi Disabled &

Blind Association (UDABA); Nduduzweni Centre for the Blind; and Emalandeni Centre for the Disabled (Umlazi). The other 35 people were identified through the use of physical addresses and telephone numbers supplied by the organisations (*supra*). The participants surveyed included women and male, young and old. The survey was conducted in the form of an interview. The researcher would ask the question in Zulu; the question would be asked in a simple way; and the researcher would then tick the correct answer from the questionnaire.

2.5 DATA ANALYSIS

The data collected through the methodology outlined above was analysed through the bouncing of theory against the reality in the form of a case study

2.6 TIME FRAME

The Research was started in February (2003) and finished in September of the same year. Data collection took less than a *month* (from July to early August). This was facilitated by the earlier planning of the data collection process, and the fact that some of the participants were found in the above-mentioned institutions / organisations.

CHAPTER 3: THEORETICAL FRAMEWORK

3.1 INTRODUCTION

The aim of this chapter is to set out the main theories and/or concepts that will serve as the main frame of reference. It simply provides the researcher's perspective of how the things fit together. The main theories that inform this dissertation are derived from the 'disability studies' and 'planning/design discipline'. These two disciplines have been married together for the purposes of building up a strong case for the inclusion of disabled people in the built environment. The disability models presented hereunder do not actually exhaust the entire ambit of 'disability theory' – instead, they have been isolated as the main models that have been used to explain the complex phenomenon of disability.

3.2 BACKGROUND: Brief history of views on 'Disability'.

3.2.1 An approach to Disability Research

By and large, social scientists and sociologists, in particular, have been doing 'disability research,' at least since the 1950s, if not before. There are, for example, many studies dealing with 'docter-patient' relations (early studies include Parsons, 1951; Davis, 1963) stigma (Goffman, 1968) institutional living (Miller and Gwynne, 1972) as well as large scale studies chronicling the numbers of disabled people in the general population (Harris, 1971). All of which have provided important insights into the current thinking on disability and related issues. However, the main problem with these studies, and the numerous others that were, (and in some cases are still being) produced, is that, by and large, they are founded on the traditional assumption that people with accredited impairments are 'disabled' by their impairments whether physical, sensory or intellectual.

By early 1960s, social scientists such as Thomas Szasz (1961) and Thomas Scheff (1966) had begun to question conventional explanations of 'disability'. By the late 1960s and early 1970s, one began to witness the politicisation of disability by disabled people in America and Britain. The redefinition of disability by the Britain's Union of Physically Impaired Against Segregation (UPIAS) (1976) was also a remarkable step. These changes marked the 'paradigm shift' from a 'medical model' to a 'social model' of disability – which advocated a holistic approach to disability – to make a claim that, physical, cultural and social environment, exclude or disadvantage certain categories of people, namely 'disabled people.'

The critique of 'mainstream disability research' marked the way for 'emancipatory research' – which drew the attention of researchers to draw on disabled people's experiences to illustrate the complexity of the process of disablement with reference to environmental and social forces (Hunt, 1981: 2, 37-50). Thus, 'emancipatory research' goes beyond involving disabled people in research over which they do not have any control. The research must contribute to the empowerment of disabled people or other groups who are, or perceive themselves, as excluded from the processes and institutions which impact on their day-to-day lives (Zarb, 1995: 2). Oliver (Zarb, 1995, *supra*) has pointed out, 'empowerment' is not something, which can be given, but something that people must take for themselves. The key issue, he suggests: "*Is not how to empower people but, once people have decided to empower themselves, precisely what research can do to facilitate this process.*"

3.2.2 The growing awareness of the exclusion of Disabled People

Disabled people were traditionally seen as '*poor helpless cripples, blind beggars, dumb idiots standing on street corners, as outcasts in the family and in society, as objects of pity and charity*' in constant need of 'curing and caring' (DPSA Pocket Guide on Disability Equity, 1999). The Second World War, in particular, resulted in a tremendously high number of people becoming disabled in a very short space of time. The science of medicine was by then sophisticated enough to keep

many of those injured people alive. This led to a new industry emerging – that of rehabilitation and charity/welfare. While there is no doubt that the ‘new industry’ did a great deal of work and advancement – nevertheless, it was used as a ‘dumping ground’, which served to get and keep the problem out of sight (DPSA, 1999). Issues such as self-help, de-medicalisation, de-institutionalisation, and equal accessibility to public facilities began to be of relevance to ‘disabled people’ who had mostly been excluded from the society in which they belong.

By early 1980s, disabled people had come together to identify issues and strategies to fight for equal opportunities and the right to speak for themselves (DPSA, 1999). The 1980s gave birth to the South African disability rights movement – resulting in the establishment of Disabled People South Africa (DPSA) in 1984.

3.3 THEORIES AND/OR CONCEPTS OF DISABILITY

3.3.1 Medical Model of Disability

Under this model, ‘Disability’ is seen as a ‘personal tragedy’ (Oliver, 1990) – an infliction that strikes at random in the general population, causing a mismatch between a particular individual and his or her environment (Ungar, 2002: 4). The ‘unfortunate’ victims are usually presented as needing pity, charity and sympathy, while doctors are seen as neutral and professional ‘experts’ (Sherry, 2000: 1). This is largely attributable to a ‘Parsonian paradigm’ with its attendant notion of ‘sick role’ where the disabled persons give over the shaping of their lives to the medical profession (Dewsbury *et al.*, 2002: 4). With this model, a person has to adapt to fit into society: a person who is different must be rehabilitated to fit the expectation of what is ‘normal’ in society (Elder-Woodward & Munro, 1992: 8) – by going through the ‘normalisation process’ in order to become full member of the society.

This model has a profound effect on government research and social policies (Dewsbury *et al.*, 2002). Townsend (1975), for example, argued that such views

of the 'disabled,' resulted in them being marginalized and the only ever addressed in piecemeal fashion by government policies. He observed that, the extent to which government would intervene in a welfare issue, 'did not bear comparison' to their willingness to help industry. Health professionals are gatekeepers in the sense that they identify the 'pathological' symptoms of disabled people, who may then become eligible for various forms of financial, educational, and social welfare assistance. Disabled people have, therefore, been disempowered by two major institutions of modernity – “medicine” and “welfare” (Locker: 1983: 43). Therefore, the remedy would be to 'empower' disabled people and integrate them within the mainstream society.

Constituting disabled people as the 'tragic' 'other,' makes it easier to justify exclusion from ordinary community activities (Sherry: 2000: *supra*). Therefore, the central point in this model is that, person's impairment is seen as being the ultimate cause of his or her disability, and therefore considers the individual to be the appropriate 'site' of change. The social effect of medical model, it is argued, has come to dominate thinking about disability, both at the level of the general public and of the professionals (politicians, planners, architects, etc) (Ungar, 2002:12). So, it should not be surprising that many disabled people have identified the medical model as one of the major barriers to a decent life (Oliver, 1996; Morris, 1992).

In the context of the built environment, the assumption is that it has somehow evolved 'naturally' to suit 'normal' humans. The built environment (and also the social and economic environment) is treated as a 'given'; its nature; origins; design etc. are not questioned. Therefore, it falls to the disabled person, with the aid of medical and rehabilitation professionals to adapt themselves as best they can to these existing structures. Where environmental modifications are made, these would only be in extreme cases and are likely to be for particular severely impaired individuals to gain access to particular buildings. Access facilities in this context are seen as specific mobility aids added on after, for example, the building has been designed rather than as a seamless part of the built environment (Ungar: 2002: *supra*).

3.3.2 Social Model of Disability

Since the emergence of the international disabled people's movement in the late 1960s, traditional individualistic explanations for the various economic and social deprivations encountered by disabled people and their families have gradually given way to a more socio-political account widely referred to as the 'social model' of disability (Barnes, 1999: 2) – which is currently the dominant model for researching disability, addressing disability from within a socio-political framework.

“It does not deny the problem of disability but locates it squarely within society. It is not individual limitations, of whatever kind, which are the cause of the problem but society's failure to provide appropriate services and adequately ensure the needs of disabled people are fully taken into account in its social organisations” (Oliver, 1996: 32; Abberley, 1999: 2)

This model brings in within its ambit, the elements of 'oppression' and 'marginalisation' (Abberley, 1987: 5-19; French 1993). These elements are captured in these sentiments:

“...In our view, it is society which disabled physically impaired people (*including other forms of disability: my emphasis*). Disability is something imposed on top of our impairments by the way we are unnecessarily isolated and excluded from full participation in society. Disabled people are therefore an *oppressed* and *marginalized* group in society. To understand this, it is necessary to grasp the distinction between the physical impairment and the social situation, called 'disability,' of people with such impairment. Thus we define 'impairment' as lacking all or part of a limb, or having a defective limb, organism or mechanism of the body and 'disability' as the disadvantage or restriction of activity caused by a contemporary social organisation which takes little or no account of people who have physical impairments, and thus, excludes them from participation in the mainstream of social activities” (Oliver, 1996: 22).

Thus, 'disability' is viewed as being the product of a disabling society, not the individual pathological body (Shakespeare & Watson, 1996: 1). The umbrella paradigm here is 'social constructionism' – an idea that 'disability' is a 'social construct' (Oliver, 1996; Swain *et al.*, 1993). This model “redefines disability in terms of a disabling environment, repositioning disabled people as citizens with rights, and reconfiguring the responsibilities for creating, sustaining, and overcoming disablism” (Dewsbury *et al.*, 2002: 2).

3.3.2.1 A critique of Social Model

Even though, the social model has now become the ideological litmus test of disability politics in Britain and other parts of the world – used by the disabled people's movements to distinguish between organisations, policies, laws and ideas which are progressive, and those which are inadequate (Shakespeare & Watson, 2002) – the social model has been criticised from a number of directions. While claiming to be a general leading model, which focuses on disabling environments, it fails to fully address all the complex social factors shaping the production of disability (Marks: 1999: 87).

Early expositions of the social model have been challenged for ignoring the differences that various disabled people experience as a consequence of gender, sexuality, 'race', culture or other distinctions (Marks, 1999, *supra*; Morris, 1991; Vernon, 1996). Barnes rejects this claim by arguing that, “misinterpretation by some disability activists has led to claims that the social model precludes discussions of impairment, the importance of 'medical' treatments, and ignores questions of gender, minority ethnic status, sexuality, class and so on” (Barnes, 1999: 5).

Within academia, “social model has become a rigid shibboleth by entirely denying medical criteria in its approach” (Shakespeare & Watson, 2002: 9). Despite this statement, Shakespeare argues that,

social model does not really produce such a rigid dichotomy. His contention is that many British activists in their public discourse use exactly this 'strong' version of the social model that he is critiquing. He submits that most activists concede that behind closed doors they talk about aches and pains and urinary tract affections, even while they deny any relevance of the body while they are out campaigning. Colin Barnes tries to identify a common ground by marrying 'medical criteria' with both 'social' and/or 'environmental barriers':

“...Disability is both biological condition and a social construct, and the terms 'disabled people' and 'people with disabilities' are used interchangeably. As Mike Oliver has repeatedly made clear, this is about far more than simply 'political correctness'. It is about the crucial issue of causality, the role of language, it is about normalising tendencies and the politicisation of the process of definition” (Barnes 1999: 578). *“An adequate understanding of the experience of disabilities arising from illness and impairments with 'downward trajectories' will need to 'incorporate a careful consideration of the physical aspects of damage,' as well as the social and economic aspects”* (Newman, 1984a –quoted in Lonsdale, 1990: 37). *“To deny the different objective and subjective realities of the different illnesses and impairments is to deny and devalue the authenticity of people's experiences”*(Abberley, 1987: 16).

The 'constructionist account' of disability is criticised by Humphrey: *“...social model harbours a number of virtues in redefining disability in terms of a disabling environment – repositioning disabled people as citizens with rights, and reconfiguring the responsibilities for creating, sustaining, and overcoming disablism* (Humphrey, 2000: .63). However, “there are self-evident, political, advantages in adopting this position” (Dewsbury *et al.*, 2002: 7). Finkelstein (1996) has recently argued strongly and widely against the critique – of including the 'impairment' and/or 'personal experience' within the social model:

“The effect of considering personal experience and impairment is to dilute the effectiveness of the social model. This has to be understood in the context of effectiveness of the social model.

This has to be understood in the context of the historical tendency to explain disabled people's experience with reference to impairment, and the tradition of sympathetic biography" (Shakespeare & Watson, 1997: 1-2)

3.4 META-THEORIES

3.4.1 Modernism

Modernism believed among other things that social problems could be solved by the rigorous application of scientific knowledge and rationality (Ungar: 2002). Social model theory has worked within a modernist context, and within the rules of logic, which are now being challenged. Modernist principles have been applied to disability – to deny that both the body and social barriers together can be the cause of disablement – and to argue against a middle ground between the medical model and the social model (Shakespeare & Watson, 2002: 19). While this approach (Modernism) recognized the impact of the environment on people, its response was not to accommodate difference, but to control human life according to the contemporary views on what was normal and desirable (Ungar: 2002). Ungar argues that the modernists' perspective of disability was based on an ideal form of a white, adult, able-bodied male. In assuming this uniformity, modernists neglected anyone who differed significantly from the 'the ideal'. Here, there are direct parallels with the medical model of disability, which takes the healthy, able-bodied individual as the 'norm' and classes any deviation from this state as abnormal. Therefore, in focusing on such a grand project of social engineering, it lost sight of the diversity and complexity of humanity (Ungar: 2002) – thus, functioning in different ways, to perpetuate the exclusion of disabled people

3.4.2 Post- Modernism

Within academia, Postmodernism views disability as a social construction that is based on incorrect and immoral assumptions about difference. The primary focus of Postmodernism is on changing social constructions that limit

individuals with disabilities (Hallahan & Mercer, 2001). Post-modernism, in the context of disability and the built environment, was therefore a reaction against the uniformity and social abstraction of modernism, which sought to re-emphasize difference and complexity in human life. Humans are not uniform in their wants, needs and desires nor are they uniform in their aesthetic tastes. Analyses such as these reveal that the city is far from a naturally evolving structure, shapes itself to accommodate all its inhabitants. The development of the built environment is shaped by a number of professional groups (politicians, planners, architects, etc.) as well as by public opinion all of which operate within certain ideologies or models (Ungar, 2002: *supra*).

Fraser & Nicholson (1990) argue against the ‘meta-historical narratives’ and modernist pursuit of universalizing and monolithic rationality – seeking to cover all dimensions of every disabled person’s, as an unattainable goal. Some academics have gone far to conclude, “disability is quintessentially post-modern concept, because it is complex, so variable, so contingent, and so situated. It sits at the intersection of biology and society, and of agency and structure. Disability cannot be reduced to a single identity: it is a multiplicity, a plurality. Adequate social theory of disability would include all the dimensions of disabled people’s experience: bodily, psychological, cultural, social, political, rather than claiming that disability is either medical or social” (Shakespeare & Watson, 2000: 19).

3.5 DESIGN PRINCIPLES

3.5.1 Universal Design

It has been observed that,

“Most design disciplines have traditionally defined the “user” or the “public” (in case of urban planning), in very narrow terms based on a conception of the user/citizen which is inherently masculine, and the “public” which tends to be made up of middle class white people living in nuclear families” (Weisman, 1999: 4).

“In terms of ease or comfort, most cities have been designed based on a physical ideal (e.g., the prototypical 70kg physically-able male) that few humans can ever hope to attain, or even approximate. Very little attention has been focused on the issue of adapting the built environment to accommodate a broad range of human abilities and disabilities” (Holten, 2003: 20).

In response to this anomaly, a major recent development in thinking about the design of the built environment has been the idea of 'Universal Design'. The main premise of this is that environments can be designed to sensitively, imaginatively and seamlessly incorporate the access and mobility needs of different people. Difference is embraced throughout the entire design process rather than as an afterthought or a set of 'add-on' features. The Center for Universal Design at North Carolina State University (Aslaksen, *et al.*, 1997: 4) gives the following definition:

“Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design. The intent of the universal design concept is to simply life for everyone by making products, communications, and the built environment more usable by more people at little or no extra cost. The universal design targets all people of all ages, sizes and abilities.”

Four aspects of universal design have been identified:

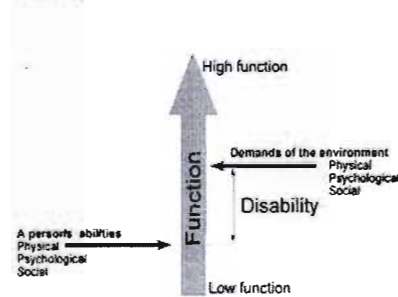
“Universal design is thus a concept, the global, all-encompassing effort to remove any and all barriers from the environment and to create accessible, comfortable, responsive spaces for the most extensive population possible. Universal design is also a philosophy – the commitment to uncovering and resolving problems during the development process, ensuring that the final solution meets the broadest spectrum of needs. Universal design is common sense – the realisation that all people have varying degrees of ability...and disability, an acknowledgement that we are imperfect beings living in an imperfect world. Universal design is a method – it is thoughtful, analytical approach

to creative design solutions that accommodates us all” (Public Works Canada, 1994: 5)

Therefore, ‘Universal Design’ addresses the scope of accessibility and suggests making all elements and spaces accessible to, and usable by all people, to the greatest extent possible. This is accomplished through thoughtful planning and design at all stages of any design project. It need not increase costs or result in special, clinical or different looking facilities. Supplementary solutions or compensatory solutions for special user groups shall only be used when absolutely necessary (Stoddard, 2002). Universal Design requires an understanding and consideration of the broad range of human abilities throughout the lifespan. This requires an incorporation of the characteristics necessary for people with physical limitations into the design of common products and building spaces. This Universal Design approach goes beyond the minimum requirements and limitations of accessibility law (Ron Mace, 1990). Designers and *planners* have pressed for clear, simple specification of solutions for achieving accessibility. People with disabilities found that the reduction of complex variables to single solutions excluded many whose disabilities fell outside the norm. A designer can meet the letter of the law, follow the details of the standards, and still not create an enabling environment (Welch, 1995: 4).

Disability in relation to the physical environment is often defined as a disparity between an individual’s ability to function and the demands of the surroundings. This incongruity or gap, may be reduced or conquered through a general and universal design of buildings and environments, and in addition, through specialised and compensatory measures and adaptation, if necessary (Aslaksen *et al.*, 1997: 12) (see Gap Model below).

The Gap Model:



Source: Aslaksen (*et, al.*, 1997). *Universal Design Planning and Design for All*, The Norwegian State Council on Disability, Norway, p. 12.

The principles of Universal Design can also be combined with other design principles, such as aesthetics. The concept of universal design:

“goes beyond the mere provision of special features for various segments of the population. Instead it emphasises a creative approach that is more inclusive, one that asks as the outset of the design process how a product...building or public space can be made both aesthetically pleasing and functional for the greatest number of users. Designs resulting from this approach serve a wider array of people... *For instance, it recognizes that similar design solutions can be found for wheelchair users and for parents with pushchairs, for wheelchair users and for children, for blind people and for those with learning difficulties. By considering differences in advance, many ‘impairments’ could be prevented from being disabling.*” (Welch, 1995:1; Italicised – my emphasis)

So, designing for children, older people and people with disabilities is not thinking about separate groups of users but a spectrum of human-environment interaction (Welch, 1995, *supra*). Thus, designing for difference does not necessarily require an infinite number of different design solutions; an imaginative approach, which is sensitive to different user needs, can also be practical and economical. This should be reflected in both the planning process and in the ultimate solutions.

3.5.2 A critique of Universal Design

The concept of Universal Design has been hailed as a progressive integrated approach to design. However, the concept is not without its critics. Parker (www.inclusionbydesign.com) argues that ‘universal design’ is a utopian idea. The critique is that many of the solutions, sometimes labelled as ‘universal, are not ‘fit for all’ to use. However, he also admits that it is understood that ‘universal design’ is not trying to achieve singular ‘one size fits all’ solutions – and that often a range of alternatives need to be provided to serve the wants and needs of a wide spectrum of users.

The critique (*supra*) is unfounded and misinterprets the concept of universal design. The concept is clear because it accepts the principle of ‘flexibility’, and allows for specialised solutions only if there are necessary and unavoidable (Aslaksen *et al*, 1997 *supra*). The critique undermines the well-documented literature on Universal Design. The protagonists of universal design reject the claim that Universal Design is a utopian idea:

“The creation of an urban environment adapted to the needs of everyone is not a utopian vision – it is an objective that communities must strive to fulfil and a concrete as well as a theoretical possibility that appears worthy of major effort. In fact, probably the principle obstacles to the attainment of this goal are the limitations of the imagination, which are often more debilitating than the restrictions allegedly imposed by physical or other disabilities” (Hahn, 1986: 273; Holten, 2003: 22).

3.5.3 Universal Design and Planning

In recent years more attention has been paid to the subject of planning, and there has been an increasing acknowledgement that some groups of the population must be focused on, if they are to be properly taken into account. There has been an increasing focus on the conditions of people with disabilities, and accessibility now plays a more central role in planning. This happens, however, often in sector related plans and not as an integrated part of overall

and long term planning. The thinking and principles of Universal Design have so far hardly been applied within planning. However, the 'clarion call' has been made that the mobility needs of different people be taken care of within the general planning system (Aslaksen *et al.*, 1997: *supra*). This is based on an understanding that "everyone is likely at some time to experience the misfit between themselves and the environment" (Preiser & Ostroff, 2003). Some researchers have gone far to make a 'bold' assertion:

"Universal Design actually assumes the idea, that everybody has a disability and I feel strongly that that's the case. We all become disabled as we age and lose ability, whether we want to admit it or not" (Waterloo Region Trends Research Project, 2001: 1).

The implication of this comprehension in planning is that planners should shift focus from "we-they" dichotomy – which gives permit to "*planning for the disabled*" – to "*planning for our future selves*," which shows a more realistic understanding of the entirety of the society. In seeking to create a barrier-free environment, architects, planners, and developers must avoid the temptation of becoming preoccupied with accommodating each type of functional impairment in the design process. Instead, conceptual approaches can be developed that would permit the construction of an environment adapted to the needs of everyone — including many people who may not realize the benefits of Universal Design (Holten, 2003).

Universal Design may be relevant to planning in many areas. A solution complying with the principles of Universal Design should be usable by all groups of the population. Translated in terms of planning, a more correct assertion would be that the measure should include all groups of the population, except for the measures which are directed specifically towards one group: measures may be proposals regarding physical design, economic measures of support and service supplies, as well as supplies of health and educational services, etc. Planning has gradually focused on all these sectors, and Universal Design would naturally be related to these kinds of plans. Some areas that need attention in planning include (Aslaksen *et al.*, 1997):

- **Physical planning** which includes everything from principal guidelines of land-use, to actual physical design of detailed solutions. To a certain extent, the requirements of design for different groups are part of planning. Demands of accessibility for disabled people are, for example, put on the design of public buildings and road construction. The individual sectors and departments do not seem to recognise, however, that consideration of the whole population is part of their responsibility. For example, the transport authorities do not fully accept the responsibility of transportation for everybody, including groups of disabled people. It is looked upon as the responsibility for the social services. The main thought of Universal Design is not fully catered for, as long as the perspective of equal status is not emphasised. The ambition of usability by different groups is taken care of, but often by offering specialised solutions. When it comes to detailed planning, there is a need to emphasise the principle of equal status, to a large extent.
- **Housing areas** in steep terrain would seem to exclude the part of the population with low mobility and with problems in moving up steep hills (e.g. wheelchair users).
- **Land use types** based on mobility by car are less usable by people who do not use a car. This would include children, adults without a car, and persons with disabilities, etc.
- The choice of solutions in **public transport** influences to what extent this system can be used by different groups of the population. Distance to stops and access design should not exclude any user group.

3.5.4 Terminology

The terms used to describe environments that promote human functioning differ in many countries. There has also been a developmental change in the language used in some countries, reflecting not only the evolution from initial efforts to remove barriers that exclude disabled people, in particular, to a more 'inclusive design' approach, but changing social policies as well (Preiser & Ostroff, 2003). The concept of 'universal design' is often confused with '**barrier-free design,**' '**life-span design,**' '**transgenerational design,**' and '**inclusive design**' (Suen *et al.*, International Centre for Accessible

Transportation, Canada). So, it is appropriate that these concepts are explained – what they mean in different contexts:

‘Universal Design’ is a term that was first used in the United States by Ron Mace (1985), but the concepts are also expressed in other countries. Universal Design and Inclusive Design have become terms often used interchangeably in the United States to label a design approach that implies equity and social justice by design (Preiser & Ostroff, 2003). The term ‘Inclusive Design’ is less well defined in the literature. ‘Inclusiveness’ means right to access, right to use and enjoy without special status or burden (Center for Universal Design, 2000). It embodies the process of inclusion: that is, bringing different user groups into the fold. It does not necessarily require uniform treatment, and allows for viable options with choice (Suen *et al.*, *supra*). Technological innovations in transport systems would be a logical area where the above design approaches can be applied, as illustrated by the design of the urban bus: “*A lift-equipped bus is a barrier-free design, a low-floor bus with ramp is an inclusive design, and a low-floor bus with level entry infrastructure is a universal design*” (Suen *et al.*, www.icat-icat.org).

Although there are other terms that are frequently used such as ‘life-span design’ and ‘transgenerational design,’ Mullick and Steinfeld (1997) explain that what separates Universal Design from these terms, is that Universal Design focuses on social inclusion. This distinction relates to the “Separate is not equal” precedent of equal opportunity.

The term “barrier-free” design was initial term used around the world (in the late 1950s) and is commonly interpreted as removing physical and attitudinal obstacles that prevents the free movement of persons with disabilities based on the compliance with regulations, standards or codes of practice. Functionality, safety, and convenience are the cornerstones of barrier-free designs (Bednar, 1977). The accessibility legislation and guidelines focused initially on the removal of architectural barriers. It was later broadened to include attitudinal barriers. It did not take long for advocates to point out the limitations associated with Barrier-free design: inability to take into account the needs of

those with sensory or cognitive impairments. This approach is a reactive rather than a proactive stance.

3.5.5 Universal Design in South Africa

The South African Human Rights Commission (SAHRC Report, 2002: *supra*) uses the concept of 'universal access'. Furthermore, the report is informed by the social model of disability – which is central to the concept of Universal Design. The Integrated National Disability Strategy White Paper (November, 1997) also uses the concept of Universal Design: this might be a reasonable indication that South Africa is embracing the concept of Universal Design in its approach to environmental accessibility 'for all.' Universal Design is widely used in United States, United Kingdom, Japan, China, and other developed states. South Africa, therefore, stands a good chance of learning from these countries.

3.6 NORMATIVE CONCERNS, PLANNING CONCEPTS, AND PRINCIPLES

3.6.1 Normative concerns

It is now a well-established principle that for planners/ urban designers to create enriching or quality urban environment, certain normative concerns or criteria should be followed for guidance. However, there are no 'hard and fast' rules in terms of the normative concerns/ criteria. There is a wide array of possible 'concerns' – varying according to each planner's background and special concerns for a 'good' built environment. The planning principles are normally informed by a broad set of 'normative' concerns. Some of the planning principles highlighted here arise from a combination of concerns. Some criteria are general, and others are more specific – thus, creating a bit of overlapping. Suffice it to say that all of them – if reasonably adhered to – will contribute to the 'quality' built environment that effectively works for all in the community.

The Commission for Architecture and the Built Environment (CABE) and the Department of Environment, Transport and the Regions (DETR) of the United Kingdom (London, 2001:19) suggest the following normative concerns:

(a) ***Character*** – to promote character in townscape and landscape by responding to and reinforcing locally distinctive patterns of development and culture. This criterion is clearly captured by Banerjee & Southworth (1990: 517) in their use of the element of “identity”: *“particular places should have a clear perceptual identity – recognisable, memorable, vivid, engaging of attention, and differentiated from other locations...it is a support for the sense of belonging to some place-attached group, as well as a way of marking a behavioral territory.”* Both “character” and “identity” are also linked to “place making”: *“it is neither a luxury nor a romantic concern – it is essential”* (See also Behrens & Watson, 1996: 10).

(b) ***Continuity and Enclosure*** – to promote the continuity of street frontages and the enclosure of space by development, which clearly defines private and public areas.

(c) ***Quality of the Public Realm*** – to promote public spaces and routes that are attractive, safe, uncluttered and work effectively for all in society (including disabled and elderly people).

(d) ***Ease of Movement*** – to promote accessibility and local permeability by making places that connect with each other and are easy to move through, putting people before traffic and integrating land uses and transport. *“The road layout and the location of facilities should be concerned with matching the circulation of end-user communities and ensuring that levels of access are maximized for the greatest number of people (see Behrens & Watson, supra).* According to Banerjee & Southworth (1990: 456), “accessibility” has to do with *“the cost in time or effort to move or communicate between activity locations; the possibility of interaction, or choice of mode of communication...”*

(e) ***Legibility*** – to promote legibility through development that provides recognisable routes, intersections and landmarks to help people find their way around. Legibility is *“a perceptual characteristic: a sensuous form that is vividly differentiated and easily structured, making a pattern that is continuous in time and space, producing a strong*

image. Primarily, this is instrumental to the goal of “meaning,” but also has connections to such values as development, engagement, choice, perhaps to mental health and accessibility. It is a necessary (but not inclusive) component of a more fundamental value, beauty, which is notoriously difficult to define for large communities” (Banerjee & Southworth, 1990: 457).

(f) **Adaptability** – to promote adaptability through development that can respond to changing social, technological and economic conditions. *“New functions may be foreseen, in which case the form may be designed specifically for that future transformation. If future changes are unpredictable, generalized adaptability is desirable...”*(Banerjee & Southworth, 1990: *supra*).

(g) **Diversity** – to promote diversity and choice through a mix of compatible developments and uses that work together to create viable places that respond to local needs. Diversity looks at “the range of variation of facilities, qualities, and activities, and the spatial mix of these variations. There may be an optimum level of such range and mix which is conducive to *choice, development*, and perhaps other objectives” (Banerjee & Southworth, 1990: 457). Behrens & Watson (1996: 11-12) call this criterion – ‘*opportunity.*’

In addition to the above elements of the built form, Banerjee & Southworth looks at:

(h) **Adequacy**: the amount and availability of facilities of an acceptable quality – housing, schools, recreation, shopping, etc. The authors, thus, comments: *“here we are involved with standards, many of which have been developed in fragmented form, more or less reliably, and with more or less reference to the primary objectives on which they were based. The standards must deal, not only with global quantities, but also with availability and choice on a local basis. Principles of equity must be included. Such standards necessarily shift from place to place, and time to time.”*

(i) **Stress**: an environment that places neither unduly much nor unduly little physiological or psychological stress on the individual, in regard to climate, effort, perceptual stimulus, etc.

Behrens and Watson (*supra*) look at the element of “*efficiency*,” which relates to efficient land utilisation and efficient service provision, and recognition of the functional and spatial relationships between different elements of the layout plan. The functional interrelationships between public facilities, between facilities and amenities, and between facilities and service should be recognised so that facilities, amenities and services can be planned in an efficient and systematic way. Lastly, the planners should also consider the element of “*scale*” (Watson, PCJ #43, Summer 2001).

All the planning normative concerns illuminated above have spatial implications for access needs of different users of the built environment. To illustrate this point, a concern for human scale, particularly where there is less ownership of cars, has implications for the planning and designs of public facilities, at both local and community-wide level. If, for example, the design and planning of land uses were dominated by the ‘motor car’ scale – the pedestrians (including ‘disabled people’) who do not own cars would find certain facilities – inaccessible. Therefore, the settlement planners should provide for an urban structure of walkable neighbourhoods and to ensure that, in terms of access, land uses or facilities are designed for all users, (including ‘disabled people’) (CSIR Building and Construction Technology: The Red Book, 2000: 7-8). The need to ensure smooth pedestrian circulation and maximisation of levels of access to facilities – especially, in low-income areas, where there is low ownership of cars – would depend on the type of layout planning concept applicable in each case.

3.6.2 Planning Concepts

The most commonly known planning concepts and street patterns, which have been, and some which continue to be influential in layout planning, include the following: **Garden City; Neighbourhood Unit; Radburn Superblock; Environmental Areas; Woonerf; Planned Unit Development (PUD); and Traditional Neighbourhood Development (NTD)** (see Behrens and Watson, *supra*).

These planning concepts are well documented in the literature. Some of them have been in practice since the beginning of the 20th century and earlier, and they have either, in their entirety or in their components, continued in operation, well into this century. Because these planning concepts have evolved over time and space, depending on the 'planning route' – they could not be interpreted as compartments. Therefore, it is difficult to draw a clear-cut line between them. Below is the basic presentation of the planning concept(s) that are considered relevant in this work:

- (a) **The street pattern**, as a structuring element, has important implications for accessibility. The gridiron street pattern has some advantages for pedestrians (including disabled people). It has an open road network, without a clearly defined hierarchy of through-routes. The layout is designed to facilitate road-based public transport services, by enabling direct and unrestricted pedestrian movement to stops, offering public transport vehicles direct and unconvoluted routes, and being more adaptive to changes in service routing and the number and location of stops. Open road geometry is more suitable for low-income areas where dependence on pedestrian and public transport movement is high. Public facilities are generally located along more intensive movement routes carrying public transport services (Behrens and Watson, 1996). Public transport services based on a grid pattern are the most easily understood by users. International research has found there is a link between neighbourhood characteristics associated with a connected street network and an increase in walking, cycling and public transport use (Department of Urban Affairs and Planning, Sydney, 2001:10). Despite the advantage of open geometry layout – roads that are long and straight, which have intersections that take the form of 90 degrees 4-legged junctions – have implications for pedestrian safety, as well as distances to facilities. When the gridiron pattern is imposed on a site with little consideration of topography, the result is steep road gradients that are based on mobility by car. When this is a case, disabled people, particularly manual wheelchair users will be disadvantaged.

(b) **The Traditional Neighbourhood Development (TND)** concept, (also known as Neo-Traditional Development) represents the newest trend in urban planning (Stanley, 1997: 1). The other similar concepts include Transit-Orientated Development (TOD) and the Liveable Neighbourhood, which combines aspects of TND and TOD (Duany Plater-Zyberk & Company: *The Lexicon of the New Urbanism*, 2002). It has a relatively open road network, in which distorted rectilinear grid layout is broken with radial streets and traffic circles, in order to reduce the problems associated with unbroken lengths of road and numerous 4-legged intersections, that emerged in earlier gridiron layouts. The result is a New Urbanists' "modified grid", with "T" intersections and street deflections, to calm traffic and increase visual interest (Steutenville, 2000: 3). Streets are scaled to pedestrians, through the incorporation of narrow road reserves, wide pavements and tree planting. Public facilities are located to create focal points within the development. The open circulation system is intended to reduce travel distances by providing more connections between two or more points within the development, and to facilitate better pedestrian access to public transport stops.

In Sydney, a recent Transport Data Centre study indicates a positive correlation between off-peak public transport use and a traditional street layout (calculated according to road 'straightness' and the number of 'T' intersections). By contrast, urban development based on *culs-de-sac* supports only indirect and unattractive bus routes, which result in lower frequencies and low bus patronage (Department of Urban Affairs and Planning, Sydney, 2001: 10).

The Principles of New Urbanism may be summarised as follows: *walkability; connectivity; mixed-use and diversity; mixed housing; quality architecture and urban design; traditional neighbourhood structure; increased density; smart transportation; sustainability; and quality of life* (www.newurbanism.org; see also Duany Plater-Zyberk & Company, *supra*). The TND recognises that the

low-income areas have high densities, which enhance the viability of public transport services (Behrens and Watson: 1996). The TND concept seems to be sensitive to the needs of different users of built environment.

The above planning approach(es) (including street pattern) do not exist in vacuum, they need to be integrated with the following concepts:

(c) **Continuum of “clustering” versus “scattering”/“dispersing” of facilities:**

The type of planning concept (i.e. type and location of activities) used in each case influences how people access certain facilities and services. Accessibility can be defined as reaching a location within an acceptable amount of time, money and effort (Commonwealth Department of Housing and Residential Development, 1995). The Clustering development – rather than dispersing – creates social, economic, and environmental benefits for the community.

The land use planning and development options can help through providing the means to shorten average trip lengths through the proximity of services and facilities, and through the clustering of facilities to permit multi-purpose trip tours. If the trend towards longer and more car based trips (or ‘trip-chaining’) can be slowed down and even reversed, then there does seem to be an opportunity for a more sustainable transport system (Banister, 2002: 2). In addition, locating activities closer together supports a shift from car use to a more sustainable travel patterns, such as walking, cycling and public transport use. The close association between uses reinforces their viability. The provision of locally accessible facilities is a high priority for people, with the lack of them a common cause of dissatisfaction (Department of Urban Affairs and Planning, Sydney, 2001: 9).

(d) Concept of “Hierarchy” or “Threshold” of facilities

The hierarchical approach consideration should be given to the establishment of a hierarchy of facilities /centres, and how this relates to the strategy for the location of employment, shopping, leisure, health facilities, and higher education development. The development of the hierarchy should highlight a range of centres, from city centre through to town, district, local and village centres and also provide an indication as to where future investment in new retail and other development will be promoted. In developing the hierarchy, consideration should be given to the role, function and importance of each centre and acknowledges that this could change over time (West Midlands Local Government Association, UK, 2001:7).

Each hierarchy of facilities, be it local facilities or community-facilities, has to be supported by its threshold to keep it viable. The catchment factor supports the compactness of development and provides a ‘critical mass’ of public transport patronage. A residential density of 15 dwellings per hectare is considered sufficient to justify relatively short spacing of stops and more efficient public transport operations (Department of Urban and Planning Affairs: *supra*). In each case, the mobility needs of disabled people will have to be matched with the ‘threshold’ for provision of facilities, in general

3.6.3 Appropriate planning system for the location of facilities

This sections looks primarily at four town-planning systems for the location of facilities in the neighbourhood level and community-wide level:

(a) Regular Cellular System

This system is largely informed by the principles of neighbourhood unit. All the local level facilities are located (clustered) at the centre of the neighbourhood – away from the major road. Despite the fact that the system allows for pedestrian circulation, it does not give enough choice to

the population – forcing the last house on the edge of the neighbourhood to travel more than 10 minutes to the local facilities. This system has negative implications for disabled people. Behrens and Watson (1996) criticise the internalised or introverted location of lower order facilities, to serve only single neighbourhood cells, making the sharing of facilities between cells difficult. The needs of one neighbourhood population cannot be met within a single neighbourhood cell. The system is not based on the facts of the way people live and meet in towns, on respect of observed social patterns. It implies the imposition of over-simplified abstract planning concept of Neighbourhood units onto the complex, rich, and concrete patterns of social life (Greater London Council, 1965: 41). Consequently, the planners should be cautious of this assumption when planning for low-income neighbourhood – because of complex movement patterns that emerge.

(b) Over-lapping Cellular System

The Overlapping Cellular System uses the same threshold as the Regular Cellular System. The difference lies in the location of facilities. While the Regular Cellular System consists of plus or minus 100%-clustering at the centre of the neighbourhood – the Overlapping Cellular System consists of partial clustering and scattering. This means that facilities are not concentrated (in one area) at the centre; some are on the major roads, at the edge. It increases the possibility of choice between the facilities: there is a bit of sharing of facilities between the neighbourhoods. In both “regular cellular system and “overlapping cellular system,” the major facilities are located at the points where the thresholds from several neighbourhoods converge at a common point.

(c) Diffuse Non-Cellular System

In this system, there is much greater scattering of facilities than in Regular Cellular and Overlapping Cellular Systems (i.e. semi-clustering and scattering). The system, however, has no rigid pattern of facility location. It does, to a certain extent, recognise the complex social patterns that

normally emerge in low-income neighbourhoods and the need to share certain facilities.

(d) Corridor system

The Corridor is a geographic area, defined by logical, existing and forecasted travel patterns served by various modal transportation systems that provide important connections within and between regions of the state for people, goods, and services. Travel within the corridor may include vehicular, rail, transit... or non-motorised (Idaho Transportation Department, 1998: 3). This system is outwardly orientated – with increased clustering of facilities focusing on the major arterials or distributors. While the system increases walking distances thereby favouring cars over pedestrians – it increases choice because it enables a number of household needs to be satisfied in a single trip. The system could be reinforced with activity nodes.

3.6.4 Planning Principles: Special emphasis on “Access and location of facilities”

In their work, “*Making Urban Places*”, Behrens and Watson (1997, 75-84) discuss the principles of planning that could be used to ensure high levels of access for both cars and pedestrians. The principles are also discussed in detail by Banerjee and Southworth, *City Sense and City Design*, 1990: 687-690; Duany Plater-Zyberk & Company (*supra*: 4). Behrens and Watson give a summary of the principles:

(a) Integrate the road layout with the surrounding movement system

According to this principle, the local circulation system should be totally integrated into the broader movement system and land use pattern. The various movement facilities provided should form an integral part of the overall system of movement in the large area, and should not be regarded as an independent sub-system merely linking or connecting to the larger surrounding movement system. The local road network should allow for existing public transport

operations to be complemented, providing additional opportunities for routing and service provision.

(b) **Prioritise pedestrian movement**

According to this principle, the ease of access of the pedestrian movement system to non-residential land use activities and public transport stops, along with the convenience and safety of the pedestrian system, should receive priority in layout planning. Pedestrians are the most vulnerable group of road users, meeting their needs and requirements should, therefore, attract greater attention than other users. *Among the pedestrians, disabled people are (also) the most vulnerable group in different respects* (italicised - my opinion). To put this principle in context, almost all trips in low-income areas are dependent on walking for at least part of the journey, and many trips are made entirely on foot. Pedestrian routes should be located to provide the shortest practical routes between activities – links through the area being direct and convenient, connecting and integrating the layout with the surrounding areas.

(c) **Facilitate efficient and effective public transport services**

The requirement of efficient and effective public transport services should receive priority in *planning and design*. The geometric and threshold (i.e. residential density) requirements of different public transport modes should inform layout design. However, one should be flexible in estimating residential population. Estimates of residential population are often based on the assumptions that each lot will be occupied by a single, average size household (usually of 5 people). In most developing urban areas of South Africa, such assumptions have proved to be highly unrealistic – the extensive subletting and sharing which takes place in most lower income areas means that actual populations can be two or three times size of planned population. This consideration would have some implications on the facility provision and distances to the facilities.

In low- income areas, commuters are generally heavily dependent on public transport services, which either connect a range of destinations or interchange

with a mix of public transport service types. Therefore, planned public transport should be a priority in planning and design, especially in low-income areas.

Good links are needed from houses to schools, shops and bus stops, etc. The majority of dwelling units should be within a 2 minutes (minimum) walk of a bus stop and the furthest house is less than 500m away (The Red book: 21, *supra*). The issue of time will also depend on the topography. Someone who is using wheelchair, or is visually impaired may need additional minutes to the 'standard time'.

(d) **Design open and flexible movement systems**

Movement systems should be designed to improve levels of access for the greatest number of people. In developing urban areas in South Africa, movement systems should be designed to facilitate, primarily, the needs of pedestrian and public transport movement – as opposed to designing road networks that accommodate only the needs of private vehicular movements. Therefore, there is a great need for open geometry form of network. The lower order road network (i.e. routes other than regional and primary distributors) should provide a system of through-connections that offer a number of possible alternative routes between two points, rather than funnelling all movement onto a few collector and arterial routes. The profligate use of *cul-de-sacs* that restrict pedestrian access should be avoided.

(e) **Expose the facility system**

The overriding aim in planning a public facility network should be to make facilities as accessible to the greatest number of end-user households as possible. The majority of public facilities should be located in positions with maximum exposure, along main public transport routes – as opposed to being located to serve only spatially defined residential cell. Public facilities that are functionally related should be located in *clusters*, so that in the face of limited public funds, the sharing of resources between facilities is made possible. The

spatial clustering of facilities enables a number of household needs to be satisfied in a single trip (Behrens and Watson, 1996: 83):

- ***Higher order public facilities*** should be *clustered* around highly accessible public transport stops, adjacent to major road intersections.
- ***Lower order facilities*** should be located at lower order road intersections along important public transport routes.

The exposure of facilities enables complex patterns of facility use between different neighbourhoods to occur. The internalised or introverted location of lower order facilities, to serve only single neighbourhood cells, makes the sharing of facilities between cells difficult when, because of demographic changes or facility backlogs, the needs of one neighbourhood population cannot be met within a single neighbourhood cell. This, often, results in a considerable decline in pedestrian safety, as people are forced to cross major arterial routes in order to reach public facilities in adjoining neighbourhood cells. The neighbourhood cell concept oversimplifies the complex social relationships that exist within a city, as well as the multifarious linkages between individual households and the range of public facilities. The problems associated with cellular systems of facility provision needs to be avoided.

On page 78-97 of their work, Behrens and Watson (1997) describe the locational requirements of facilities, according to a *hierarchy*. The authors suggest five categories in this regard, but the first category is not relevant in this case:

- The second category of facilities are those that need to be as visible and as accessible to the greatest number of people as possible. As a result, these facilities require easy access to public transport stops or interchanges, and high levels of exposure to more intense activity routes. The location of these facilities along linear public transport routes facilitates the provision of road-based services, and the alignment to trunk services to enable adequate service connections to public facility buildings. Examples include post offices, community centres and libraries.
- The third category of facilities are those that need to be as accessible to the greatest number of people as possible, but situated in relatively quiet and

safe surroundings. As a result, these facilities require easy access to public transport stops or interchanges, but should be located a block or two back from more intense activity routes. Examples include primary and secondary schools, day-hospitals and clinics.

On page 41, Behrens (*et al.*, 1997) critiques the current layout planning guidelines, and points out that, the location of higher order public facilities at accessible points within the distributor network facilitates easy vehicular access only, at the expense of public transport and pedestrian access. Consequently, higher order facilities are least accessible to the poorest income groups who do not own motorcars.

- The fourth category of facilities are those that need to be accessible to pedestrians, and require quiet and safe surroundings. As a result, these facilities should be located inside quiet, predominantly residential areas, within easy walking distance of user households. Examples include crèche or day-care centre. Crèches may also be located at commercial and employment centres, for the convenience of working parents.
- The fifth category of facilities are those that need to be as visible and accessible to pedestrians as possible. As a result, these facilities should be located within easy walking distance of user households, on busier road intersections. Examples include collection points, public telephones and water standpipes.

3.7 UNIVERSAL DESIGN AND PLANNING PRINCIPLES

The main premise of Universal Design, as illuminated above, is that environments can be designed to sensitively, imaginatively, and seamlessly incorporate the access and mobility needs of different people. 'Difference' is embraced throughout the entire design process rather than as an afterthought or a set 'add-on' features. Universal Design addresses the scope of accessibility and suggests making all elements and spaces accessible to and usable by all people to the greatest extent possible. This is accomplished through thoughtful planning and design at all stages of any design project. It need not increase costs or result in special, clinical or different looking

facilities. Universal design requires an understanding and consideration of the broad range of human abilities throughout the lifespan.

What is required in practice is to marry Universal Design principles with the current planning principles. Some of the planning principles may be questioned or rejected from a 'universal design' perspective. But, the aim of Universal Design is not to 'reject' the planning principles, but to say, through the application of those principles, planners and other professionals involved in the planning and design of the built environment, should not make 'hasty generalisations' about the mobility needs of different people, and that, in certain cases, there should be strong emphasis towards designing for different people. The concept of Universal Design may, to a certain extent, be interpreted as a utopian idea or idea of the 'extremists'. Notwithstanding such labels, it is indeed a constant reminder to planners, to employ a 'life span' design that could possibly meet the needs of *all residents*, to a greatest extent possible.

3.8 CONCLUSION

The theories and/or concepts have been illuminated in such a way as to build close relationships between them – thus, providing a clear picture of how the researcher intends to apply them in a real scenario in the form of a case study. It should be noted, however, that these theories and/or concepts do not actually exhaust the entire ambit of “disability theory” and “Planning principles/ concepts”. The researcher has craftily selected those that are considered relevant for the purposes of this research.

CHAPTER 4: LEGAL FRAMEWORK

4.1 INTRODUCTION

The aim of this chapter is to set out the context within which the South African law governing disability, accessibility and the built environment could be understood. South Africa is now part of the international community and its people with disabilities are indeed subjects of the international human rights law, and, are entitled to the full range of human rights as articulated in the existing conventions.

4.2 INCREASING NEED FOR THE PROTECTION OF THE RIGHTS OF PEOPLE WITH DISABILITIES

While the importance – and increasing role – of international law in promoting the rights of persons with disabilities is recognised by the international community, domestic legislation remains one of the most effective and fundamental links of facilitating and promoting the rights of persons with disabilities. International norms concerning disability are useful for setting common standards for ‘disability legislation.’ In order that the rights of persons with disabilities may be further realized, contemporary International law has increasingly recognized the need for all states to incorporate human rights standards into their national legislation.¹ Although the means chosen to promote full realization of economic, social and cultural rights of persons with disabilities may differ among countries, there is no country exempt from the need for improved policies and laws for individuals with disabilities.

The United Nations (UN)² expresses its sentiments as follows:

“One of the dominant features of twentieth century jurisprudence has been the recognition of law as a tool of social change. Though legislation is not the only means of social progress, it represents one of the most powerful vehicles of change, progress and development in society.”

This chapter acknowledges that the persons with disabilities are often excluded from the mainstream of the society and denied their human rights. Both *de jure* and *de facto* discrimination against persons with disabilities have a long history and take various forms. They range from invidious discrimination, such as the denial of educational opportunities, to more subtle forms of discrimination, such as segregation and isolation because of the *imposition of physical and social barriers*. Effects of disability-based discrimination have been particularly severe in fields such as education, employment, housing, transport, cultural life and access to public places and services. This may result from distinction, exclusion, restriction or preference, or denial of “reasonable accommodation” on the basis of disablement, which effectively nullifies or impairs the recognition, enjoyment or exercise of the rights of persons with disabilities (UN: *supra*). By virtue of (such) an understanding of the role of law and challenges facing people with disabilities, during the past two decades – and in South Africa, particularly during the 1990s, ‘disability’ has been reframed to reflect a human rights approach – which:

“Is based on the premises that disability is not a deviation or an anomaly, but that persons with disabilities are an inevitable part of the population and have the potential to contribute to society. The rights-outcome approach draws from a variety of disciplines but frames disability issues through the lens of principles of human rights and equality of well being as outcomes” (Roehrer Institute, 1996: 17).

Since 1994, concrete steps have been taken to address the ways in which people with disabilities are excluded from the mainstream society. Government policies and legislation now reflect the need to promote the rights of persons with disabilities (SAHRC Report, 2002: 6).

Despite some progress in terms of legislation over the past decade, such violations of the human rights of persons with disabilities have not been systematically addressed in society. Most disability legislations and policies are based on the assumption that disabled persons simply are not able to exercise the same rights as non-disabled persons. The current legislation fails to protect the rights of people with disabilities, and to meet the standards and principles of the international human rights instruments (SAHRC: *supra*). Consequently, the situation of persons with disabilities will often be addressed in terms of rehabilitation and social services. A need exists for more comprehensive

legislation to ensure the rights of disabled persons in all aspects – political, civil, economic, social and cultural rights – on an equal basis with persons without disabilities. By virtue of such an anomaly in legislation, the SAHRC produced a report, which reviews the current legislation governing accessibility and the built environment, with a view to integrating the disability perspective into all spheres of legislative effort and thereby improving the situation of persons with disabilities.

4.3 GENERAL INTERNATIONAL NORMS AND STANDARDS PERTAINING TO PERSONS WITH DISABILITIES

The United Nations Charter³ affirms the essentiality of “a universal respect for, and observance of, human rights and fundamental freedoms for all without distinction...” The rights of individuals with disabilities are grounded in a human rights framework based on the United Nations Charter, the Universal Declaration of Human Rights⁴, and international covenants on human rights and related human rights instruments.

In order to safeguard the rights of disabled people, the International Convention on Economic, Social and cultural rights, imposes certain duties on the states, and these duties have important implications for South Africa. By and large, states are required to take appropriate measures, to the maximum extent of their available resources, to overcome any disadvantages⁵. It also emphasises that, “even in times of severe resource constrains...the vulnerable members of society can and indeed must be protected by the adoption of relatively low-cost targeted programmes”⁶

4.4 NEW INITIATIVES RELATING TO THE RIGHTS OF PERSONS WITH DISABILITIES

4.4.1 The International Convention on Protection and Promotion of the Rights and Dignity of Persons with Disabilities

There is no doubt that there are many international instruments that directly or indirectly deal with issues pertaining to person with disabilities – it is only a handful of provisions that people with disabilities are explicitly mentioned.⁷ More recently, at its fifty-sixth session, the General Assembly adopted the resolution 56/168, establishing the Ad Hoc Committee “to consider proposals for a comprehensive and integral international convention to promote and

protect the rights and dignity of persons with disabilities, based on the holistic approach in the work done in the fields of social development, human rights and non-discrimination and taking into account the recommendations of the Commission on Human Rights and the Commission for Social Development.”⁸ It is hoped that the “Convention will configure the approach to disability and focus on the rights of people regardless of their disability status but mindful of their needs and their diversity. The fact that so much has been done bears testimony to the various nations that have shown their commitment to a process of equality and, of course, to their citizens with disabilities. There can be no denying that, despite the long road travelled by persons with disabilities in order to reach this point, we remain a long way from the finishing line” (McClain, 2002: 2). The initiative to develop a new and specific disability rights instrument is being supported by the South African government (SAHRC Report: *supra*).

4.4.2 African Decade

Apart from the proposed UN Disability Rights Convention, there has been another new initiative that has occurred at the regional level. The African continent recently launched the African Decade for Persons with Disabilities (2000-2009). This is an important mechanism because it is more regional/country specific and understands the complexities and nuances that African states may face in addressing the issue of disability. The Decade is aimed at empowering and improving the conditions of persons with disabilities. It is a sub-programme of the New Partnership for Africa’s Development (NEPAD) (McClain, 2002: *supra*). One hopes that the African Decade will bring more tangible results that will reflect, to a greatest possible, the aspirations of persons with disabilities, and reduce the ‘barriers’ that are bolted in the strata of our society.

4.5 INTERNATIONAL DISABILITY STANDARDS AND NORMS AND THE SOUTH AFRICAN CASE

4.5.1 The UN World Program of Action Concerning Disabled Persons

The past 20 years have seen significant developments in international standard setting to promote equity for persons with disabilities. Some of the highlights in this regard were the declaration by the United Nations of 1981 as the International year of the Disabled Persons. This year was not recognised by the South African government. It was, nevertheless, promoted by the NGO sector whose adopted theme was “Full Participation and Equality” (White Paper on Integrated National Disability Strategy, 1997: 15). This event generated a momentum within the international community towards policy and law reform on disability. This momentum led to the adoption by the UN General assembly, on December 1981, of the World Program of Action Concerning Disabled Persons (WPA), which, to date, remains one of the most significant international policy documents on disability that fundamentally transformed global thinking on disability.

The WPA introduced, for the first time in the history of international standard setting, became the most progressive and comprehensive approach to disability management policy framework. It focuses on prevention, rehabilitation and the equalisation of opportunities for persons with disabilities. Central to this policy framework, is the concept of “equalisation of opportunities” and “equal participation”. The United Nations has long recognised the difficulties faced by disabled persons in the built environment. The United Nations Decade of Persons in Stockholm in August 1987 placed the highest priority on the need for equalisation of opportunities of disabled persons where accessibility of the built environment was one of the most basic requirements.⁹ As a response to the WPA concept of “equalisation of opportunities”, South Africa has enacted a number of legislations in this regard. One example is the Promotion of Equality and Prevention of Unfair Discrimination Act of 2000 (PEPUDA) (see 4.6.3).

4.5.2 The UN Standard Rules on the Equalisation of Opportunities for Persons with Disabilities

An evaluation conducted by UN at the end of the International Decade of Disabled Persons, on the implementation of the WPA throughout the world, showed that very little progress had been achieved. One of the criticisms made against the WPA was that it did not provide sufficient guidance for practical implementation at a national level, hence the need for a supplementary instrument to augment for this shortfall. This led to the adoption of a new instrument by the UN General Assembly at its 48th session on 20 December 1993 (Resolution 48/96), namely, the UN Standard Rules on the Equalization of Opportunities for Persons with Disabilities (UNSREO) (Committee Report No.9, *supra*). Its purpose is summarized under clause 15, on page 8 as follows:

“The purpose of the rules is to ensure that girls, boys, women and men with disabilities, as members of their societies may exercise the same rights and obligations as others. In all societies of the world there are still obstacles preventing persons with disabilities from exercising their rights and freedoms and making it difficult for them to participate fully in the activities of their societies. It is the responsibility of states to take appropriate action to remove such obstacles. Persons with disabilities and their organizations should play an active role as partners in this process. The equalization of opportunities for persons with disabilities is an essential contribution in the general and world wide effort to mobilize human resources...”

The Standard Rules set out areas of awareness-raising, medical care, rehabilitation and support services as preconditions for equal participation, and then proceeds to set policy guidelines in areas for equal participation, namely, accessibility, education, employment, income maintenance and social security, family life and personal integrity, cultural, recreational and sports activities and religion. Finally, with regard to implementation measures, the Standard Rules contain a set of recommendations, regarding information and research, policy-

making and planning, legislation, economic policies, coordination of work, the role of organizations of persons with disabilities, training, monitoring and evaluation of programmes, technical and economic cooperation and international co-operation (Committee Report No.9, *supra*).

South Africa, as a member country of the United Nations, is a signatory to the United Nations Standard Rules on the Equalization of Opportunities for People with disabilities. The South African Human Rights Commission, South African law, policy-makers, and organizations of people with disabilities are guided by these rules outlining the minimum requirements United Nations member states need to meet in fulfilling their responsibilities to disabled persons (SAHRC Report, *supra*: 18). The Standard Rules, which became one of the principal guides for the INDS, therefore, identifies four preconditions (*supra*) for equal participation of people with disabilities. These preconditions not only serve to guide national disability policy, but also serve as benchmarks of progress and measures by which we may evaluate the successes and the failures of policy. Together, these preconditions for participation and objectives for National Disability Strategy provide a set of useful standards and norms against which the current policy framework may be evaluated.

4.6 THE NATIONAL STANDARDS AND NORMS PERTAINING TO PERSONS WITH DISABILITIES.

4.6.1 The Constitution of the Republic of South Africa (Act No. 108/1996)

South Africa is an emerging constitutional democracy. The new democracy brought with it the process of writing the supreme law of the land, the 1996 constitution. This was an important development for the disabled community in South Africa. Our constitution is billed as one of the most progressive constitutions in the world. It is a constitution that reflects the struggles faced by the majority of South Africans (McClain, 2002: 1). According to section 2, the constitution is the supreme law of the republic, and the obligations imposed by it must be fulfilled. According to section 7, the state is mandated to respect, protect, promote and fulfil the rights of all people in the Bill of Rights.

The Bill of Rights (Chapter 2) of the 1996 Constitution guarantees fundamental rights to all citizens, and it specifically prohibits, in section 9 – the equality clause – direct and indirect discrimination, by the state or an individual, against anyone on the basis of disability.

Discrimination based on disability is specifically mentioned and disabled people are thus guaranteed the right to be treated equally and to enjoy the same rights as all other citizens. The inclusion of disability in the equality clause of the constitution is a result of the restless struggle that people with disabilities waged during the oppressive apartheid regime. It is a result of organised disabled people who fought to be heard and who mobilised to achieve this victory (McClain, 2002, *supra*). The inclusion of this provision in the constitution has far-reaching implications for preventing discrimination against disabled people in our society. It now requires practical implementation (White Paper on Integrated National Disability Strategy, 1997: 17). Consequently, legislation cannot on its own change the mindsets and transform the social landscape to capture the true spirit of our constitution.

4.6.2 The South African Disability Policy

The overarching policy in South on disability issues is the White Paper on an Integrated National Disability Strategy, (INDS). This policy was arrived at in 1997 after a very extensive and participatory process in which people with disabilities were consulted throughout the country (McClain, 2002: 2). The INDS provides a blueprint for integration and inclusion of disability into every aspect of governance – so as to address the social, economic and political inequalities that marginalize people with disabilities from mainstream society in South Africa. Deputy President, Mr Zuma, in his speech during the International Day for Disabled Persons (3 December 2001), correctly puts it that “the White Paper is a land mark policy document, and seeks to ensure that government departments consciously make their policies, procedures, practices, and programmes disability inclusive”. Another important feature about the

INDS is that it advocates a paradigm shift from dealing with disability related issues – from the medical and welfare model to a human rights and equitable development model (INDS, 1997; McClain, 2002).

One of the important policy objectives of the INDS, which is germane to this work, is to create a barrier-free society that accommodates the diversity of needs, and enables the entire population to move around the environment freely and unhindered. The White Paper recognises that there are number of barriers in the environment which prevent disabled people from enjoying equal opportunities with non-disabled people. For example, structural barriers in the built environment; inaccessible service points; inaccessible entrances due to security systems; *poor town planning*⁴⁰, and poor interior design.

Another objective of the INDS is to develop an accessible, affordable multi-modal public transport system that will meet the needs of the largest numbers of people at the lowest cost, while at the same time planning for those higher cost features which are essential to disabled people with greater mobility needs. This objective arises from the need for rapid progress in developing a public transport system that is flexible and accessible. The Paper recognises that the lack of accessible transport is a serious barrier to the full integration into society of people with disabilities. Thus, an accessible transport as a human right implies a departure from the traditional medical/welfare model of providing trips primarily for medical purposes. People with disabilities should be able to travel, regardless of the purpose of the journey (INDS, 1997, *supra*).

4.6.3 The Promotion of Equality and Prevention of Unfair Discrimination Act (2000)

The constitution requires that enabling legislation be promulgated to further substantiate the equality clause (Act No.108 of 1996). To this end, the parliament of the Republic of South Africa passed the Promotion of Equality and Prevention of Unfair Discrimination Act (2000). Section 9 (Chapter 2) of PEPUDA gives special attention on the prohibition of unfair discrimination on

the ground of disability. It recognises that the failure to eliminate obstacles that unfairly limit or restrict persons with disabilities from enjoying equal opportunities or failing to take steps to reasonably accommodate the needs of such persons, would constitute unfair discrimination. For example, a public school, which denies a child in a wheelchair admission to the school because the school does not have a ramp, would be failing in its duty to reasonably accommodate the needs of children with disabilities. In this example, the child's right to equality, right to education, the principle of inclusion and the child's right to participate in everyday society would be affected (Committee Report No.9, *supra*). The Act also imposes a clear and unequivocal duty on the state to take special measures to promote the rights of persons with disabilities. The important part of the Act is that it addresses issues around *environmental accessibility*. Section 9 (b) of the Act includes within its ambit, the contravention of the Code of Practice or Regulations of the South African Bureau of Standards that govern environmental accessibility as an unfair discrimination, and, thus, specifically makes prohibition in this regard.

In conclusion, Chapter 5 of the Act, dealing with the promotion of equality, takes cognisance of the 'loopholes' that exist, or that might exist in the implementation or observance of the law, by ruling that, it is the general duty of the state to promote equality. Significantly, the Act also rules that the promotion of equality is the responsibility of persons operating in the public and private domains.

4.7 SOUTH AFRICAN LEGISLATION GOVERNING ACCESSIBILITY AND THE BUILT ENVIRONMENT

The legislative framework governing the built environment in South Africa has three interdependent mechanisms (SAHRC Report, 2002: 27):

4.7.1 Building Standards Act (Act 103 of 1977)

The Building Standards Act (Act 103 of 1977), last amended in 1989, is the enabling Act under which the National Building Regulations are made. It

provides a framework within which the regulations can be administered, monitored and enforced. The Act and Regulations must therefore be read together. The stated purpose of the Act is: “to provide for the promotion of uniformity in the law relating to the erection of buildings in the areas of jurisdiction of local authorities; for the prescribing of building standards; and for matters connected therewith.”

4.7.2 National Building Regulations

The National Building Regulations, made by the Minister of Public Works in terms of Section 17(1) of the Building Standards Act, aim to ensure that buildings are designed and built to be safe, healthy and convenient for users. The purpose of Section S of the National Building Regulations (“Facilities for Disabled Persons”), and its associated Code 0400 includes regulations setting out the national requirements for an accessible built environment. Part S (“Deemed-To-Satisfy Rules”) of the regulations makes an interesting commentary: “...*a factor to be considered is that some of these facilities can also be of benefit to many who would not generally be regarded as disabled persons.*” This commentary impliedly accepts the concept of ‘Universal Design’ that advocates that environments can be designed to sensitively, imaginatively and seamlessly incorporate the access and mobility needs of different people: i.e. people with disabilities, older people, children, people with prams, travellers carrying heavy luggage, etc. Although this was an important development in the equalisation of opportunities for people with disabilities, these regulations have been extremely badly administered and monitored.

According to INDS (1997: 30), specific problem areas include:

- Planning professionals do not recognise the specific details required in providing a barrier-free environment.
- Development agencies do not have clear policies on environmental access. The result is that hundreds of schools, clinics and other public buildings are presently being built with no regard for barrier free requirements.

- Standards prescribed by the National Building Regulations require review.
- No barrier free design norms have been incorporated in the Public Sector Briefing Document
- Specialist expertise in the field of barrier free access is limited in South Africa.

Costs are often cited as the reason for the failure to provide a barrier free environment. Yet, when accessibility is incorporated in the original design, the additional cost does not generally exceed 0, 2% of the overall cost of development (INDS, 1997: *supra*).

4.7.3 SABS 0400 Code of Practice

The SABS 0400 Code of Practice is a non-statutory set of guidelines giving technical information for the practical application of the National Building Regulations. The legislation governing accessibility of the built environment has primarily relied on the application of one aspect of the Regulations, Part S, which was introduced in 1985 to address the needs of people with disabilities.

The SAHRC has noted, in relation to the above legislative framework governing accessibility and the built environment, that

“People with disabilities and those with special needs now have constitutional rights to equality and human dignity. Laws concerning the built environment must be updated to reflect this. Discriminatory architectural barriers to equitable participation in mainstream society must be removed”(SAHRC Report, 2002: 27).

4.8 REVIEW OF THE CURRENT LEGISLATION

The Accessibility and Built Environment Legislative Project Report has identified deficiencies in the current regulatory framework for accessibility and the built environment. These include:

- Insufficient definition of disability to meet the specific requirements of various disabled user groups.
- A loophole for property developers and building professionals to evade or ignore accessibility requirements, because the non-statutory guidelines of the SABS Code of Practice are not legally enforceable
- Lack of enforcement of Part S of the National Building Regulations by building control officers throughout the country, with the result that the majority of public buildings in South Africa are inaccessible
- Failure to cross-reference Part S with other sections of the National Building Regulations, resulting in further loopholes, anomalies and misconceptions in the application of regulations

The SAHRC makes a comment that *“The legislative shortcomings have serious implications in that they continue to reinforce the physical and social barriers faced by citizens with special needs. Unless people with various kinds of disabilities can use built environments, they will not be able to equitably participate in society and fully enjoy their rights.”* In a nutshell, the enabling legislation does, to a certain extent, have impact on the built environment.

4.8.1 A comparative view – American, British and Australian building regulations and standards

In its report, the SAHRC made a comparative analysis on the above three sets of legal frameworks. The regulatory systems of the United States of America, Britain and Australia were selected for comparison with South Africa’s, as they have relatively progressive legislation governing accessibility and the built environment. The comparative study shows the American with Disabilities Act (ADA) Guidelines to be the most comprehensive, providing detailed standards for the accessibility of public use areas. It is also the most easily enforceable system. The British and Australian systems have introduced categories to meet the differing needs of various disabled user groups, but both require further development. In comparison to these international standards and regulations, the SAHRC found the South African legislation to be deficient. Only minimal provision for access by users with disabilities is made and some basic safety and access issues require attention. The legislation puts less emphasis on the

outdoor environment. The ADA standards for accessible design are more comprehensive and watertight.

While the SAHRC, at one stage, proposes amendments to the current legislation – an alternative to further piecemeal amendment of the current legislation framework is to create one comprehensive South African disability Act. In this way, the rights of people with disabilities may be promoted in a more streamlined and mainstreamed way.

4.9 CONCLUSION

While the importance – and increasing role – of international law in promoting the rights of persons with disabilities is recognised by the international community, domestic legislation remains one of the most effective and fundamental link of facilitating and promoting the rights of persons with disabilities. International norms concerning disability are useful for setting common standards for ‘disability legislation.’ Those standards also need to be appropriately reflected in policies and programmes that reach persons with disabilities and can effect positive changes in their lives. However, the legislation alone is not a panacea of all disabled people’s concerns. While, this is true, the law should, however, make sure that the rights of disabled people are fully protected. Policies that illuminate discrimination against people with disabilities and express specific intentions for redressing it, will help reverse exclusion, raise expectations, manage change and demonstrate accountability.

ENDNOTES

¹ See Compilation of International Norms and Standards Relating to Disability, a comprehensive manual on applicable international norms and standards at <http://www.un.org/esa/socdev/enable/discom00.htm>

² UN International Norms and Standards: *Overview of International Legal Frameworks for Disability Legislation*, August 1998

³ Signed in San Francisco on 26 June 1945 and entered into force on 24 October 1945.

⁴ Adopted by General Assembly resolution 217 A (III) on 10 December 1948.

⁵ ICESR, Para 5 of General Comment No. 5

⁶ International Convention on Economic, Social and Cultural Rights (ICESR), General comment No.3

⁷ <http://www.peoplewho.net/unconvention/quitongo.htm>.

⁸ <http://un.org/esa/socdev/enable/rights/index.html>: *Promoting the rights of persons with disabilities: Full participation and equality in social life and development*.

⁹ CIB W84. Report of the Second International Expert Seminar on Building Non-Handicapping Environments: *Renewal of Inner Cities*, Prague, October 15-17, 1987.

¹⁰ The examples of poor town planning are the location of schools, clinics positioned at the highest points in town, narrow pavements areas, lack of demarcated special bays, etc. However, this should be matched with the topography of each area.

CHAPTER 5:
CASE STUDY: UMLAZI-
CONTEXTUALISATION AND STATUS QUO

5.1 INTRODUCTION

This chapter seeks to set out the context within which the case study exists. In order to understand the complexity of Umlazi today, it makes sense that the chapter also looks at the historical background of the area. The chapter also looks at the existing situation – that will eventually inform the analysis of the case study. Both social and spatial aspects of the area are highlighted. The chapter also looks at disability prevalence in Umlazi. Lastly, the chapter attempts to identify the ‘nexus’ between the history of Umlazi, the existing situation (status quo), and the built environment ‘barriers’ that are facing the disabled people of Umlazi today. By so doing, the chapter acknowledges that the built environment ‘barriers’, that ‘we’ experience today, reflects on how the space was produced, and that those barriers are bolted in apartheid papers, designs, etc. that have existed before many of us were even born.

5.2 CONTEXTUAL BACKGROUND OF UMLAZI

The study area is defined as the formal township of Umlazi– the largest formal township in KwaZulu-Natal. The area forms part of the South Central Local area. Umlazi is located approximately 15km south of the Durban CBD. Being in the extent of approximately 4500ha, Umlazi is located between the Umlazi River in the north and the Ezimbokodweni River in the south. The surrounding areas include Isipingo in the east, Chatsworth in the north, the Vumengazi Tribal authority area in the west and the Sobonakhona Tribal Authority area in the south (**see Map No. 1: end of Chapter 5**). Umlazi contains in the region of 36 000 formal residential sites, some multi-storey hostels, and approximately 19 000 informal residential structures. Much of the development in the area is characteristic of townships in general with major deficiencies

relating primarily to residential accommodation, provision of facilities and services, lack of urban and economic opportunities, etc.

5.3 HISTORY OF UMLAZI: *“from a Mission Reserve to Apartheid City”*

The most ‘relevant’ history of Umlazi could be traced back as early as 1862 when the Umlazi Mission Reserve was created by Deed of Grant in favour of the Church of England¹ (Durban Housing Survey, 1952: 478). 476 acres were allocated to the Church authorities, as Glebe Land and 7,521 acres were constituted a mission reserve for the settlement of ‘natives’ under the guidance of the Trustees. The land where the Mission was created belonged to the Cele Tribal area – which included the strip of land between the Umlazi River and Mbokodweni River – and Makhanya Tribal area to the south. In fact, most of the later proclaimed township of Umlazi fell on land that was formally part of the Umlazi Mission Reserve (Townsend, 1991: 23).

In the early 1940s the idea of converting the Umlazi mission reserve into a township was mooted by the government. The significance of the urbanisation of Umlazi reserve lies not only in its far-reaching contribution to Durban’s housing problem and its influence on the future development of the city, but also, as its main purpose, to serve as a dormitory town for people relocated from central areas, such as Cato Manor, in the government’s forging of the apartheid city (Iyer Rothang Collaborative Report, 1998: 23).

In 1945, Durban Municipality made a representation to the Minister of Native Affairs to acquire all or some portions of the Mission’s 7, 521 acres. This was supported by the Natal Provincial Administration, subject to adequate compensation in the form of other suitable land being made to the displaced rural landholders² (Durban Housing Survey, 1952: 481). The Native Affairs Commission, however, after examining the proposal and inspecting the area, recommended against the request. They hold the view that the expropriation of sites occupied by the reserve inhabitants and the transformation of the reserve into an urban settlement were undesirable. The reserve ‘natives’, however, were also against the surrender of any part of the reserve for fear of becoming subject to

municipal control (Durban Housing Survey: 1952). By 1948, it was reported by the Minister of Native Affairs that the plans for the urbanisation were in hand.

In 1949, it was reported that the Native Affairs Department (NAD) intended to build about 3 000 houses in the mission reserve. These would be built in six villages. Altogether, 11 000 houses were a target for a population of 55 000 Africans (The Daily news: 03/06/1949 – cited in Khumalo: 1993). In June 1949, the Department of Native Affairs set up the Umlazi Urban Planning Council to act in an advisory capacity and to ensure the co-operation of all interested persons. The Natal Provincial Administration has contributed extensively towards the success of the scheme by offering the services of three of its departments, namely, those of the Provincial Town and Regional Planner, the Provincial Water Engineer, and the Natal Housing Board. The Provincial Town and Regional Planner prepare the original report on the urbanisation scheme and the outline development plan. The Planning of Umlazi sprung for the application of planning techniques – aimed at reducing the cost of communal services and increasing the density of housing development, to the hilly and broken terrain (Durban Housing Survey: 1952). The complete urbanisation scheme envisaged a fully integrated satellite town, housing a population of 60 000 and including, in addition to residential accommodation, a town centre, schools, and hospital, central and local shopping facilities, community halls, churches, parks and playing-fields (Durban Housing Survey: *supra*).

The removal of Africans from Cato manor took place in the early 1960s, and the Building of Umlazi Township began in June 1961 (Khumalo, 1993: 30). The first houses at Umlazi became available in May 1962 for residents of Cato Manor and Kwamashu who were employed in the Southern of the city – and by 1963, Umlazi was absorbing 50% of those removed from Cato Manor (Maasdorp & Humphreys, 1975: 63). It was reported that 4000 houses (4-roomed) had been occupied in Umlazi (The Daily News: 05/07/1963 – cited in Khumalo: 1993).

5.3.1 The New Township

From the onset, Umlazi was designed to be the largest township ever built inside one of South Africa's 'bantustans'. It is not surprising that today Umlazi has developed following the 'suburbia sprawl' model. As has happened with most of the African townships in South Africa, however, no names were given to the sections or roads of Umlazi in the original design of the township. Instead, a system of sections (starting with the first letter of the alphabet and using all the letters except I and O before going on AA, BB, CC, etc) or Units (using numbers) was used when referring to various parts of the huge township. Each section or unit would consist of about 1 000 to 2 000 houses, with its own primary schools and other facilities. But not every section has its school(s). Major facilities might serve a number of sections. Section S or unit 16 was set aside for many of the larger social facilities that would serve the whole of Umlazi community (Townsend, 1991: 33). As none of the roads were given names, the only way of giving directions became by referring to house numbers within each section. When Durban Corporation began to build the houses in Umlazi – the first sections to be built were Section V, A, B, C, and D. The Chronology of the building of the sections after Section V followed alphabetical order to a large extent, and at present Umlazi contains 26 Sections/ neighbourhoods of formal township housing, ending at Section BB.

5.3.2 The Role of Capital

The location of Umlazi bears testament to the role of capital in the formation of Umlazi. Whilst the area was located within a homeland, its physical location was on the border of the homeland in close proximity to the emerging industrial and commercial business activity within the core – south of Durban. The area served as a dormitory area for cheap labour required within the core. As such, emphasis was not placed on creating a viable local community with required social and economic infrastructure, but merely to create a place to store labour to be used when required (Iyer Rothang Collaborative Report, 1998: 24).

5.3.3 Development Approach

According to Iyer Rothang Collaborative Report (*supra*), the design and development approach within Umlazi was characteristic of the dominant approach of the time – *modernist approach*. Accordingly, this approach correlated well with political needs in creating *inwardly focused areas*. The report identifies five main characteristics of the approach – which are still evident even today:

- *Separate Rigid Zoning*: in case of Umlazi, the institutional framework to administer development was weak and therefore entirely adhered to.
- *Hierarchical Movement Systems*: the design of the area was based on the needs of the motor vehicle despite the low level of vehicular ownership.
- *Specialised Functions Centred Geographically*: the location of unit centres and town centres in the geographic centre despite the fact that the centres of activities were not necessarily the geographic centres.
- *Separation of Activities*: the clinical ordering of the land in Umlazi results in a monotonous and sterile landscape divorced from any sense of urbanity.
- *Statistical Basis in Settlement Making*: the basis of overall environment was not determined by landscape opportunity and principles of place making, but was based solely on statistical calculations for facilities, which was very often inadequate.

In a nutshell, it should be noted that the historical influences of Umlazi have to a large extent been mutually enforcing. Many of the spatial ‘products’ of apartheid policies and approaches are still evident, and, any attempt to address this legacy needs to be holistic – taking into account economic, social, environmental, economical, and institutional factors – the roots of which emanated from the original designs and the implementation of the plans.

5.4 THE STATUS QUO: “Umlazi Today”

5.4.1 The Physical Status Quo

5.4.1.1 Residential Development

The Umlazi area comprises of 29 neighbourhoods (formal and informal), numbered A to CC, containing, in the majority, traditional 51/9, 4 roomed standard townships houses as well as the Glebe area consisting of multi-storey hostels, and section DD being a peri-urban area (Townsend, 1991). It is estimated that there are of order of 36 000 residential sites in Umlazi that have been developed formally. Higher quality housing is confined to peripheral neighbourhoods such as Z, AA, and BB. Whilst very limited formal residential expansion has occurred, Umlazi, like many of the urban townships in the late 1980s, experienced substantial informal housing expansion. Informal settlements within the township are suggested to accommodate in the region of 19 000 households. This represents almost 35% of the total residential accommodation within the township. Whilst rudimentary upgrading and formalisation comprising 11 000 sites within these informal areas has occurred to date, there remain approximately 8 000 households that have not been formalised and consequently remain with no access to basic services. In total it is suggested that there are there are approximately 55 000 residential households in Umlazi. However, this estimate does not include the hostel areas and it also does not include the informal outbuildings within the formal residential development (Iyer Rothang Collaborative Report, 1998: 25).

5.4.1.2 Movement Systems

Main access to and within Umlazi is facilitated via the northern and southern spinal roads from South Coast Road and the N2 (**see Map No.2: end Chapter of 5**). These represent the main carriers of vehicular movement. The series of internal collector roads link the

various residential neighbourhoods within these spinal roads. Apart from these east-west linkages, which facilitate movement from the township to the CBD, there exist no major linkage opportunities north of Chatsworth or south and west to the adjacent tribal communities. It is premised here that linkage was not based on *integration or choice* but rather to serve as an efficient flow of labour to the southern industrial core (Iyer Rothang Collaborative Report, *supra*). Rail also represents a dominant flow of movement. The Umlazi railway line with its five local stations provides adequate linkage to the remainder of the metropolitan area.

5.4.1.3 Social and Economic Infrastructure

Whilst Umlazi may contain, in certain cases above local significance facilities such as a university, technikon, stadium, and a hospital, it is now well serviced in terms of social facilities. The method in determining the number of facilities was based on thresholds that included only the formal development. Substantial growth in the area has resulted in pressures on the existing facilities to the extent that a large number of such facilities are now dysfunctional. In addition, whilst sites have been put aside for community facilities, past policies of limited investment and centralised control, has resulted in a large percentage of such facilities not being developed. There exist within Umlazi areas previously identified for industrial development, such as areas in Unit W. This particular area has not been developed and consequently has been settled on through informal settlement. This presents a serious problem in addressing social facility needs (Iyer Rothang Collaborative Report: 1998).

In terms of economic infrastructure, apart from local level corner shop activities, Umlazi does not contain any substantial economic infrastructure. The town centre (Section W) located in the geographic centre and therefore in the wrong position, has also not flourished as

an economic centre. Limited economic development has occurred at Unit V at the entrance of the Township. For the most part of Umlazi is dependent on the CBD and areas such as Isipingo Rail for such services. The *Ezimbuzini* area is establishing itself as the accessible economic node.

5.4.1.4 Urban Form

Umlazi displays characteristics of typical township design, and functions extremely poorly in terms of environment performance when considering the level of convenience and opportunity it affords its residents and in terms of creating a sense of place and belonging (see Chapter 3: Theoretical Framework). The Iyer Rothang Collaborative Report (1998: 26-27) has noted the following about Umlazi Urban Form:

- The *sprawling nature of development* and the *centralisation of facilities*, to the extent that such facilities do exist, result in an environment that does not accommodate convenient pedestrian movement. The area also offers less choice in terms of movement within and outside the area, and accessibility to community facilities. The scale of the environment is based solely on the *needs of the motorcar*.
- The monotonous regimentally established neighbourhoods *lack any sense of place or identity*. *Legibility* within the area extremely poor resulting in limited opportunity for users to establish clues and orientation within the environment.
- The *low-density sprawling* nature of the township coupled with its lack of hierarchical structure has limited the potential to channel energies and economic opportunity to key points within the area. As a result, a substantial amount of economic opportunity is dispersed within the area and in fact channelled efficiently outside the area.

- The monotonous application of *standardised housing* coupled with mono-functional uses has resulted in the area lacking any sense of vibrancy, place of safety, or identity (sense of community).
- The basis of the settlement has been the provision of *free-standing individual housing* stock emulating much of suburban thinking from upper and middle-income areas. However, this model fails dismally in low-income situations where social and recreation needs cannot be met within the individual realm. Whilst the public environment should provide this essential support for such needs, in the case of Umlazi little investment has been made to the public realm. Therefore, in terms of providing the necessary support, the public realm serves as nothing more than left over space.

Generally, Umlazi lacks public spaces (e.g. parks) and routes that are attractive, safe, and uncluttered. The roads are not safe for use by disabled people. The lack of (effective) traffic calming methods makes it difficult for disabled people to cross the busy roads. The lack of paved sidewalks is also evident in Umlazi.

5.4.1.5 LOCATION OF FACILITIES (INCLUDING INADEQUACY OF LOCAL FACILITIES)

Umlazi, as a low-income area, presents a relationship between the inadequacies of facilities, location of facilities, and the long distances produced by the inadequacy and inaccessibility of the facilities.

(a) Clinics

In the whole of Umlazi, there are only 7 clinics which are located in sections D, Q, U, L, H, G, K, and are all in unsatisfactory condition (see Map No. 3: end of Chapter 5). These clinics are not properly equipped to cater for the needs of an area with a large population as Umlazi. The sharing of these facilities seems to be frustrated by the poor physical linkages between the sections within Umlazi. The long

distances created as a result thereof do not affect disabled people only, but also the 'able-bodied' people. The lack of linkages has cost implications in terms of transport. The linkages between K and CC, K and AA; M and AA, Q and U, and T and U are poor (**see Map No. 4: end of Chapter 6**).

(b) Telephones

The reasonable assumption made here is that most residents of Umlazi do not have private telephones and have to rely on the use of public phones. The telephones are at particular locations that are too far for some. For disabled people, particularly blind and visually impaired people, it is not only about distances to those telephones, but also about lack of signage or 'information floors' (paved /tactile surfaces) leading to the telephone kiosks. However, Telkom cannot put telephone kiosks in every single corner of Umlazi. The location of telephone kiosks in wild and unsafe environment has exposed some of the facilities to vandalism.

(c) Public Transport (and location of bus stops)

The majority of the people of Umlazi do not have private cars and are dependent on taxis and buses for transportation. The buses and taxis use only the main route i.e. they do not penetrate residential areas (**see Map No. 5: end of Chapter 5**). Because of the nature of taxis, they could try to penetrate residential areas to minimise distances. However, for buses, it is a different case. The roads are too narrow to accommodate buses: they were not originally planned/designed for buses.

**(d) Schools for disabled people and/or welfare institution/
associations**

In the whole of Umlazi, there are four institutions for the disabled people accommodating different types of disabilities. Some of these institutions play more than one role – accommodation, education, and

projects. The institutions are located in sections S, U, Q, and T. General public schools are sufficient in other sections of Umlazi – but because the facilities are introverted, it becomes difficult to share these educational facilities with other sections. The lack of linkages always presents a problem. However, these schools do not accommodate disabled people. **Map No.6 (see end of Chapter 5)** shows public schools and tertiary institutions. Disabled people prefer specialised schools, the majority of which are located outside Umlazi.

(e) Section W and Umlazi Town Centre

Umlazi Town Centre, which is located in section W, accommodates important facilities such as library and pension pay point. However, the Town Centre is inaccessible. The historical separation of the land uses and the separation of land use planning and transportation planning has contributed negatively to creating a vibrant local economy (e.g. Town Centre – neither at railway, or near a spine road) **(see Map No.7: end of Chapter 6)**. Furthermore, the Town Centre is in the geographic centre of Umlazi – instead of activity centre (e.g. V section), which is generally informed by rich internal dynamics and/or movement patterns. For disabled people, pension pay point is a very crucial facility.

(f) Corner / ‘spaza shops and shopping centres

These are dealt with under ‘Survey Questionnaire section’ [see 6.3.3.1 (a) & (b)].

5.5 Environmental Aspects

There are substantial pressures that have been placed on the natural environment of Umlazi. The rapid urbanisation and the resulting growth of informal development are most notably factors in this regard. Townsend’s work (1991) discusses land invasions and informal settlements in Umlazi. The natural environment within the context of

meeting basic needs and survival has largely been given a low development priority (Iyer Rothang Collaborative Report, 1998).

5.6 Demographic Profile

Umlazi is the largest formal township in KwaZulu-Natal and contained an estimated population of around 300 000 in 1991³ and 379,638 in 1996⁴. However, based on October 2001 census, the population of South Africa has increased from 40, 6 m (1996) to 44,8 million people⁵. This increase might have an impact on the population of Umlazi. There are approximately 55 000 dwellings in Umlazi with household sizes differing remarkably amongst the type of settlements within the area.

5.7 PREVALENCE OF DISABILITY

5.7.1 South Africa

In South Africa, estimates from a range of sources suggest that more than 7% of the total population, or over 3 million people, have a moderate or severe disability. Disability affects the lives of almost all South Africans at some stage or in some way. This is because disability does not only affect the disabled individual, but also touches this person's family, friends and fellow community members. The proportion of people with disabilities in the population varies in different age groups and older people are significantly more likely to have a disability. There is a disproportionately high incidence of disability amongst poor people. Men have a slightly greater likelihood of being disabled than women. Statistics and information on the nature and occurrence of disability in South Africa are scant and usually unreliable, for various reasons: these include:

- Different or inadequate definitions of disability
- Various or inappropriate research methodologies and techniques
- Failure to collect data from remote and underdeveloped areas
- Lack of prioritising of the needs of people with disabilities in social and economic planning (SAHRC Report, "Towards a barrier-free society", 2002: 16)

According to the SAHRC Report (2002), Statistics South Africa paid more attention to disability in Census 2001 and enumerators received special training to record information from disabled respondents. This data will be released in 2003. It is hoped that the data will correct some of the anomalies with regard to the nature and prevalence of disability in South Africa.

5.7.2 Disability and the history of Umlazi

By virtue of the fact that the sources are scant and unreliable (*supra*: 5.1), there is no evidence of the nature and prevalence of disability in Umlazi. However, the reasonable assumption is that the majority of disabled people are 'Africans', and they stay in African areas, of which Umlazi is one of them. Since Umlazi was developed as a 'kraal' for cheap labour – and people were working under terrible conditions – this fact *per se* may have contributed to the prevalence of disability, not only Umlazi, but also in other African townships. The existence of four centers of disabled people in Umlazi bears testament to the fact that there is a reasonable 'high' number of disabled people. Some of them are not housed in these centers – they visit them for projects or educational purposes. Some of them – do not even appear on the 'map'. As indicated by the World Bank⁶, poverty and disability are not mutually exclusive, and should be tackled in unison. Umlazi is not an exception in this regard.

The history of Umlazi and the "*disabling built environment*" do not exist as separate compartments – they exist in unison. The original design of Umlazi shows that when the place was design, little consideration was placed *on creating a viable local community with required social and economic infrastructure*. It is not surprising that this study has been conducted, and that many of the planning/design approaches employed in Umlazi are herein criticised.

5.7.3 Disability and the Status quo ("Umlazi Today")

The history of Umlazi is recorded in the books, however, the 'harsh results of planning and engineering' are still recorded on the land uses, streets, facilities, etc – they are part of the status quo. They have been perpetuated by a *modernist*

philosophy of planning. The status quo still affects the able-bodied, disabled people, and elderly people of Umlazi.

5.8 CONCLUSION

The chapter has attempted to put the case study on the 'map.' This has been done by setting out the historical background as well as the existing situation – the status quo. Both social and spatial dimensions of the area were illuminated. The chapter has also attempted to show that, in order to understand the complexities that exist in Umlazi today – a clear identification of the important 'veins' of history will eventually lay down the foundation for future intervention by the planners, in particular. It has also been shown that 'disability' in the context of Umlazi – and probably to other African townships – cannot be separated from 'poverty' and the poor planning solutions hastily applied by the Apartheid institutions.

ENDNOTES

¹ In South Africa, now the Church of the Province of South Africa (in *The Report of the Lands Commission*, 1902: 53-57).

² *Natal Provincial Gazette*, No. 1972, 1945.

³ Central Statistical Service (Statistics South Africa): 1991

⁴ United Nations Statistics Division: 1996

⁵ www.statssa.gov.za

⁶ Ann Elwan, *Poverty and Disability*: a background paper for the World Development Report, World Bank, October 1999. See also <http://www.dfid.gov.uk/Pubs/files/disability.pdf>

CHAPTER 6: CASE STUDY: DATA ANALYSIS

6.1 INTRODUCTION

This chapter attempts to build on Chapter 5, which introduces the case study. While the methodology section of this work has attempted to explain, in detail, the purpose of the study, the social research methods employed herein as well as the *rationale* for their application – this chapter attempts to analyse the data collected through the research methods presented in the methodology section. The findings of the study are a composite assessment of the “*disabling built environment*” in that they capture the views and the perceptions of the disabled people of Umlazi. The analytical criteria involve three broad aspects, that is – *location of facilities, detailed design of facilities, and urban form elements* illuminated in Chapter 3 of this work. The data collected through the use of ‘key informant’ method, focus group method, researcher’s (Informal) observation will, in addition to Survey findings, further consolidate the views of the disabled people of Umlazi. The informal observation, which is not herein explicitly or formally captured, serves as a yoke in consolidating the data collected through the other research methods. However, reasonable attempts have been made to guide against researcher’s ‘observation-dictatorship’ – thereby avoiding any bias towards the views of the disabled people of Umlazi.

6.2 INTERVIEWS

6.2.1 Key Informant interviews

6.2.1.1 Disabled Women Development Programme (WDP)
Chairperson [KZN Provincial Executive Committee (PEC)
Member] of Disabled People South Africa (DPSA): Dudu
Mokoena (10/07/2003)

The purpose for conducting this interview is highlighted, in detail, in the methodology section of this work.

The interview with the DPSA was not based, specifically on the case study, but it covered the general issues of ‘disability’ and the ‘disabling environment’ – which, however, serves to consolidate the findings of this research.

The results of this interview are based on the broad questions presented in the methodology section. The interview kick-started by identifying the broad issues that affect the disabled people. The chairperson responded to the question by looking at the following aspects:

- *Architecture*: buildings and the immediate out-door environment.
- *Planning*: location of facilities and the detail design of facilities, including transport facilities
- *Public Transport*: buses and taxis

From the *architectural perspective*, the chairperson looked at government and private buildings, new and old. With regard to the old government buildings, she pointed out that the majority of them are not accessible particularly to wheelchair users. Some of the buildings have small passages/ circulations areas. She pointed out that doors are designed only for able-bodied persons. There is a great need for automatic doors. With regard to lifts, the ‘control buttons panel’ is placed at high position – making difficult for wheelchair users to reach it. For blind and visually impaired people, the ‘control buttons panel’ should also include Braille writing. It is also difficult to do ‘retrofitting’ in these old buildings because of ‘poor’ robustness. Some of these buildings are protected by the ‘heritage law’, and cannot be changed in any way. With regard to new government buildings, she pointed out that there was a ‘reasonable accommodation’ for disabled people – even though there is still a lot that needs to be done.

While government ‘forces’ the privately owned buildings to be accessible, the “*government need to get their own house in order, and lead in an exemplary manner*”, said the Chairperson.

With regard to the privately owned buildings, she pointed out that the law puts more emphasis on the new buildings, and not on old ones, that need to be changed for mobility needs of disabled people. The costs of accommodating disabled people in the built environment are always cited as the main factor. However, she also made clear that some companies have approached DPSA for advice in terms of complying with the Law requiring that – all buildings be made accessible to disabled people

With regard to *planning*, she pointed out that certain community facilities are located in places, which are not accessible to disabled people. The unpaved roads, slippery surfaces, and lack of adequate crossing areas, especially in ‘black’ townships – were also raised as critical issues, which pose problems for disabled people to navigate the built environment. The poor location of street furniture, as well as uncontrolled street trading creates narrow and confusing spaces for disabled people to navigate. In some areas, bus stops are not located within the reasonable walking distances, and thus, putting an additional burden on disabled person, in terms of mobility. The lack of *accessible public* transport was also raised as a critical issue that excludes disabled people from the mainstream society.

The chairperson was also asked about DPSA involvement in making sure that planning accommodates the needs of disabled people. The chairperson pointed out that they have a programme called NEAP (National Environmental Accessibility Programme), which solves some of the problems of disabling built environment.

However, the programme has run out of funds. Their involvement also involves approaching municipalities to make sure that planning does take into account the needs of disabled people. However, she pointed out that when it comes to the detailed planning and implementation of those plans – the needs of disabled people are not fully catered for. Her opinion was that there is ignorance on the part of planners in terms of the special needs of disabled people. She also pointed out that the ‘able-bodied’ population has dominated design thinking in planning and or the built environment.

According to the chairperson, they are also involved in policy formulations to make sure that the needs of disabled people are accommodated. They participated in the formulation of the Disability Policy (INDS, 1997).

They also participated in the drafting of the Code of Practice, which lays down the minimum design standards. However, there is a lack of enforcement mechanism. Lastly, she pointed out that it was difficult to comment on whether there are any tangible improvements in the lives of disabled people. Accordingly, there is still a long journey to address some of the problems of ‘disabling built environment’.

Conclusion

The conclusion that could be gleaned from this interview is that the problems of disabled people are complex – they range from inaccessibility of both government and privately owned buildings to the barriers created by planning in terms of the location of facilities, the design of facilities, as well as inaccessible public transport that exclude disabled people from the mainstream society.

The planning and/design professionals are often ignorant of the special needs of disabled people, and, when they are planning – the ‘able-bodied’ person dominates the design approach. There is still a lot that needs to be done, so as to transform the needs of disabled people into concrete realities in South Africa.

6.2.1.2 eThekweni (Durban) Transport Department: Public Relations Officer (PRO): Mrs Mbali Mbhele (10/07/2003)

Since the majority of the disabled people, especially those from ‘African areas’ are dependent on public transport, especially buses, it became critical to investigate whether or not Durban Transport addresses the mobility needs of disabled people, including elderly people.

The public relations officer (PRO) pointed out that the National Department of Transport has initiated a project called *SUKUMA* – a pilot project to accommodate the mobility needs of disabled people in public transport. This project sought to target the previously marginalized people. Durban was selected to implement the demonstration project using specially modified buses within a normal scheduled bus service. The National Department of Transport had allocated 1 million rands to this project – which was to be run by Durban Transport under the management of the Durban Metropolitan Advisory Board.

There are two buses that are fitted with hydraulic lifts to allow wheelchairs to be loaded onto the bus. The bus has the carrying capacity of 23 passengers on crutches and four cubicles designed for wheelchair users. It also accommodates both blind and visually impaired people. The buses run daily along three fixed routes – KwaMashu/Ntuzuma, Umlazi and in the CBD.

However, according to the PRO, there is a great demand for this service all over Durban. Unfortunately, the 1 million rand allocated to the project has been exhausted. It is not clear whether the project will expand in future. The project at the moment falls under Rament Alton, the new Durban Transport Operators. Because of the new changes – the taking over of the New Operator – it became difficult for the PRO to comment on the future plans.

Since the *SUKUMA* Project caters only for disabled people – the PRO was asked whether there was any chance of Durban Transport introducing *low-floor buses* so as to integrate both able-bodied and disabled people in one transport mode. She commented that, because of costs involved, it was unlikely that the Durban Transport could introduce such project any time sooner.

The PRO was also asked to comment on the location and accessibility of bus stops especially in ‘black’ townships. In Umlazi, for example, the buses are restricted to the major route, and do not penetrate the residential areas –thus, creating unreasonable distance to bus stops along the major route. In response, she pointed out that, in some sections of the residential areas, especially in Umlazi, the roads are narrow in such a way that they cannot accommodate buses. Some roads are not well maintained, and characterised by potholes. The PRO did not have information about the upgrading of bus stations to provide for sensory/ auditory information to assist both the blind and visually impaired people.

Bus stops-shelters need ‘warning’ tactile surfaces to alert blind and visually impaired people when approaching the bus stops-shelters. For wheelchair users, the stops-shelters should have dropped kerbs.

While the standard used for the spacing of bus stops may be appropriate for 'able-bodied' persons – for disabled people (including elderly people), it means additional time and energy. However, the buses cannot penetrate some of the areas, and the provision of bus stops depends on the adequate threshold to support them: so, they cannot be provided everywhere.

Conclusion

What could be gleaned from the interview with the PRO is that, even though the National Department of Transport has introduced Project, *SUKUMA*, there is still a lot that needs to be done. The large area like Umlazi cannot be serviced by one bus. There is a great demand for this service. However, the financial constraints seem to be a '*cul-de-sac*'. The problems of the "transport-disadvantaged people" are complex, and they cannot be solved by mere introduction of *low-floor buses* or *buses fitted with hydraulic lifts*. It is also about planning transport facilities in a manner that supports accessibility – by making sure that bus stops are located within the reasonable walking distances. Different land uses should be planned in a holistic way to avoid 'loopholes' in the built environment. The accessibility of the public transport is but one level of 'dismantling' the disabling barriers that exclude disabled people from the mainstream society.

6.2.1.3 Chairperson of KwaZulu-Natal Taxi Council (KWANATACO)

As stated in the methodology section of this work, it would have been also very useful to interview the Chairperson of KWANATACO to determine whether or not the taxi industry accommodates the mobility needs of disabled people. However, by virtue of the situation explained in the methodology section – the interview ended in a fiasco.

An address by the Deputy-President of the Republic of South Africa (Mr Zuma) during the International Day for People with Disabilities (3 December 2001), answered many questions regarding the accommodation of disabled people in taxi transport. Looking from the way the government exercises ‘tight’ control over the Recapitilisation Project, it appeared to the researcher that the government data was more reliable as it pertained to the ‘inside information’.

His Excellency, Mr Zuma pointed out that in order for the government to mainstream disability into government initiatives, it had to ensure that the bidders in the taxi industry Recapitilisation Project tender stipulate that accommodation for most disabilities *will be fully accommodated*. However, it should be noted that the Recapitilisation Project constitutes the ‘future-part’ of transformation in the taxi industry – the results of which are not as yet known by virtue of the Recapitilisation Project which has become the ‘bone of contention’ between the government and the taxi industry.

6.2.1.4 Taxi Drivers (Umlazi)

In order to find out about the existing situation in the taxi industry, 15 taxi drivers from different taxi associations in Umlazi, who have been in the industry for a long time, were interviewed.

Central to the interview was to investigate whether in selecting the taxi routes – do they consider the mobility needs of disabled people; are they prepared or flexible enough to divert some few meters from the taxi route in cases where the need, or compelling circumstance of ‘disability’ arise. In response, all 15 drivers came up with similar answers – that, because of the skyrocketing competition in taxi industry, taxi drivers tend to be impatient and ambivalent towards disabled people.

They are not flexible enough to divert from the formal taxi route. If there is a need for diverting – that, would have to be formalised by the taxi association concerned, as part of the extended route. The ‘formalisation’ process also helps curb clashes between associations that might have interest in the route, unless the route explicitly falls within the jurisdiction of one taxi association. The taxi drivers were also asked about whether or not they offer any kind of help to the disabled people, especially wheelchair users. The drivers pointed out that they offer help, but subject to additional costs.

They usually charge a double fare (i.e. wheelchair user pays for himself and for his wheelchair) because of the space that the wheelchair consumes. The time consumed while helping wheelchair user to board was also cited as a reason for reluctance to help wheelchair users. In contrast, the blind and visually impaired people are in better position in this regard.

Conclusion

The current position with regard to the mobility needs of disabled people in the taxi industry is one of exclusion, and negative barriers towards disabled people, especially wheelchair users.

While the taxis are not designed to accommodate the wheelchair users, ‘awareness of disability’ within the taxi industry should be illuminated to curb ‘double disability’ – that is, physical design of taxi as well as negative ‘attitudinal barriers’ towards disabled people.

While the future of Recapitalisation Project, plus its promises to ‘transport-disadvantaged people’ is not yet known– one hopes that disabled people will be fully accommodated in the taxi transport, as highlighted in Deputy-President’s Address (*supra*).

The critical reading of situation seems to suggest that taxi industry has little control over the Recapitalisation Project, unless the 'scale of affairs' is tipped otherwise in favour of the defensive position of the taxi industry, in which case, the mobility needs of disabled people might fall short of attention they deserve.

6.2.1.5 Department of Transport (KZN)

As pointed out in the methodology section of this work, it would have been also very useful to interview people from the Department of Transport (KZN) to find out if they recognise the problem facing the disabled people in transport (i.e. bus types, locations of bus stops and route. Because of certain reasons, the interview was ended in a fiasco. However, through the researcher's efforts, was able to get hold of the official speech by KZN Minister of Transport (Mr S'bu Ndebele) delivered at the launch of Project *SUKUMA* – a pilot project by the Department of Transport to provide mobility for disabled people (1 December 1998) (*supra* 6.2.1.2). The taxi transport is now part of the Durban Metropolitan Transport Plan. Deputy-President's speech addresses 'disability and the future of taxi industry in south Africa'. The Minister's speech addressed most of the questions that were part of an interview. Thus, it became unnecessary for force the situation as the time was also of the essence. The DPSA interview also illuminated most of the questions relating to transport issues.

6.2.1.6 Town Planning Department (eThekweni Municipality): Divisional Development Planner: Mr Lihle Phewa – (15/07/2003)

The interview with the planner was guided by the broad questions set out in the methodology section of this work. The aim of an interview is also highlighted in the methodology section.

The planner was asked whether there are any **formal criteria for briefs/ evaluation of detailed planning** to accommodate disabled people. The planner looked at three aspects:

- (a) **Planning:** the planner pointed out that, at planning level, they do not actually concern themselves with 'planning for' disabled people. They plan for an average person. When they are considering the appropriate site for the location of facilities, the distances between the facilities, and the distance travelled from a house to a local facility, are planned according to a standard of an average 'able-bodied person.' Therefore, he concluded that, in planning, they have not been any formal criteria for the evaluation of plans to make sure that they accommodate the needs of disabled people.
- (b) **Urban design:** at this stage, there are formal criteria about the relationship between buildings and surrounding spaces. However, those spaces have not designed with greater considerations for disabled people. The specifications are based on an average 'able-bodied person'.
- (c) **Architecture:** At this stage, the specifications become more solid. There are building regulations, which state that every building should be made accessible to all people – including disabled people. However, the planner pointed out that, whenever the issue of disabled people is raised, the question of costs associated with providing accessibility for disabled people, becomes a real issue. However, the failure to comply with minimum specifications could disqualify the plan.

The planner was also asked if there are any planning **guidelines that state, at planning level, how the needs of the disabled people should be addressed.**

According to the planner, there are no planning guidelines in South Africa that guide planners in terms of how they plan an environment in a way that accommodates the mobility needs of different people. In practice, the guidelines are for a 'general planning', and they do not go into details in terms of the needs of disabled people. In fact, "the needs of disabled people could hardly be considered by the planners". Therefore, it is not the question of whether or not the planning guidelines are clear or ambiguous, "there are no planning guidelines about 'planning for' disabled people", said the planner.

The planner was also asked about the **level of participation/ lobbying or consultation needed from disabled people to make sure that their concerns become the integral part of planning and implementation.**

The planner pointed out that there has not been a clear case where consultation of disabled people has been formalised. In fact, they have been excluded from planning process. He pointed out, however, it would be interesting to involve disabled people in planning – so that they could guide planners in term of how environment can, in real life, be planned for everybody. He concluded:

“...It will be important to scrutinize the process used to consult and engage people in the development and planning process so as to ensure that they are not themselves operating in an exclusionary or discriminatory way”.

Despite the fact that, in South Africa, there are no specially designed planning guidelines for disabled people, the planner was asked **whether, in real life, can they 'plan for all'.**

The planner pointed out that, given the heterogeneity of different groups (disabled and non-disabled), compromises will undoubtedly be necessary and – arriving at an optimal solution will inevitably be complex. However, the planner admitted that there are cases where planners can influence the degree of barriers in the built environment that affect disabled people, subject to a greater consideration by the planners. He recommended that access and space standards should be used as minimum thresholds not optimum targets for facility locations. However, certain factors will also come into play.

“Certainly, disabled people are likely to benefit from proximity to, or a ready means of accessing, shops, amenities, health care and other services, as well as their own support networks. Much will depend on the configuration of facilities not only on the site, but also in the surrounding area”, said the planner.

The planner also recommended that, planning principles like clustering of facilities, and an emphasis on investigating the system of corridors, could also have a positive impact on disabled people.

Conclusion

What could possibly be gleaned from the interview with the planner is that there has not been a great consideration of the needs of disabled people in planning. At planning level, there are no formal criteria for the briefs/ evaluation of detailed planning in terms of reasonable accommodation of disabled people in the built environment. The concrete specifications are only provided at the architectural level. Even at this level, there are many buildings that do not comply with accessibility regulations.

In South Africa, there are no specially designed planning guidelines for ‘planning for disabled people’. Planners follow the guidelines that are part of the ‘general planning’. Those guidelines are informed by the standard of an average ‘able-bodied’ person.

In practice, it is difficult to plan for all people of different abilities and disabilities – because arriving at optimal solution will inevitably be complex. To accommodate everybody in the built environment, compromises will have to be made. There are cases where the planners can influence the degree of barriers in the built environment. This requires commitment from the planners. To do this, they will have to make sure that there is full consultation/participation by the disabled people in the planning process.

6.2.2 In-depth Interviews (Umlazi)

In-depth interview with a single individual allows significant probing of a respondent's thoughts and opinions. They can provide great detail. They can also cover the most intimate of subjects, as the face-to-face nature of the interviewing technique allows for a bond of warmth and trust to be created. Four separate interviews were conducted: one with a wheelchair user; one visually impaired person; one blind person, and one elderly person. Because of the way in which 'disability research' has often disregarded 'emancipatory research' (see Chapter 3) – resulting in literature and community misinterpreting 'disability', it became necessary to investigate some of the misrepresentations, by asking few simple questions. The participants were asked to identify the built- environment 'barriers' that affect them. All four participants started by identifying barriers that were (are) related to the *detailed design of environment*, and their answers were interpreted as:

- *High kerbs and/or lack of dropped kerbs:* restricts the mobility of wheelchair users, while reasonable 'high' kerbs facilitate the mobility of both blind and visually impaired people – because they need sharp kerbs to be able to detect any barrier, including whether they are still on pavement or they have stepped into carriageway. They also affect elderly people because of difficulty in negotiating high kerbs, including steps.
- *Steep terrain or ramps:* areas with steep gradient affect manual wheelchair users because of energy needed to keep wheelchair moving.

Steep terrain that is slippery and unpaved affects also Blind people, Visually Impaired, and Elderly people because of energy needed avoid falling, while at the same having to use stick to detect 'danger' spots/zones.

- ***Uneven paving slabs:*** slabs that are not fitted correctly serves as a barrier especially for wheelchair users i.e. wheels get stuck in between the slabs. Continuous maintenance of hard infrastructure is very crucial for disabled people: 'minor' interventions could have positive impact on the lives of disabled people.
- ***Slippery surfaces:*** unpaved surfaces especially on rainy day could be dangerous to all, including able-bodied people.
- ***Insufficient paved surfaces or tactile surfaces:*** for Visually impaired and Blind people, paved/tactile surfaces serve as information 'floors' for navigation purposes. Surfaces with 'bubbles' are a useful source of navigation. The 'naked' environment is always confusing. For manual wheelchair users, the manual wheelchair does not move smoothly on an unpaved surface, and requires a lot of energy to keep it moving. Surfaces that are (poorly) cobbled also restrict circulation of wheelchair users.
- ***Lack of adequate sidewalks:*** most of the roads do not have sidewalks and this compels disabled people to walk on the road (carriageway) risking being knocked down by cars.
- ***Poor signage:*** lack of clear signs in road and other spaces that need to be informative poses problems for all, including 'able-bodied' people. Clear signs save time and energy.
- ***Poor lighting in the streets:*** wheelchairs do not have lights: they heavily depend on the public lighting. Poor lighting poses danger to them i.e. they could be trapped in deep gutter or manholes left opened. Generally speaking, poor lighting increases the possibility of crime incidences. Elderly people, by their nature, need 'caring' environments.
- ***Narrow pavements:*** affects them all, including able-bodied people. For wheelchair users, restricts circulations – forcing them to share the 'busy road' with motorcars. For Blind and visually impaired people, they could be an advantage because they do not have to negotiate a lot of 'naked' or 'wild' space.

- ***Street furniture poorly placed, restricting access:*** bins, robots, etc. poorly placed in narrow pavements restrict circulation of disabled people, and pose real risks to them.
- ***Uncontrolled activities (informal trading) in the paved surfaces:*** restrict the circulation freedom of disabled people. Traders have ‘attitudinal barriers’ against disabled people. In some cases, Blind and Visually Impaired people who use canes/sticks would accidentally pull down the whole stand or table for apples, etc. Municipality should pay much attention to this kind of ‘struggle for space’. This problem is most prevalent in the city.
- ***Deep gutters along roadside, impending crossing:*** they badly affects Wheelchair users and Elderly people. Visually Impaired and Blind people have to exercise too much of attention to be able to detect the degree of ‘danger’.
- ***Lack of resting places in steep slopes:*** disabled people dispute the ‘naturalness’ of environment. Wheelchair users felt that the lack of ‘resting place’ along the steep streets should be provided. The others could also benefit from this.
- ***Insufficient designated road-crossing surface in busy roads:*** affects everybody: they have to rely on help from sympathetic individuals (i.e. family members; relatives or strangers). Robots fitted with ‘beep’ device are helpful for both Visually Impaired and Blind people. Traffic calming methods are not adequate. E.g. humps, road signs, etc.
- ***Cars parked adjacent to dropped kerbs:*** restricts the circulation of disabled people, particularly wheelchair users.
- ***Manholes left opened / damaged:*** these holes are sometimes difficult to detect – depending on the ‘mobility techniques’ one have. There are incidents where BL and VI have been found trapped in the manholes. Road workmen are sometimes careless. Where any hole has been left opened, and is located along pedestrian routes, it must be barricaded (with hard structure). Plastics are sometimes difficult to detect with sticks especially if they are loosely placed around the hole.
- ***Lack of sufficient pathways, or (trees braches, signs overhang the footway):*** the lack of pathways restricts choice – and causes people to

travel unreasonable distances to reach certain facilities. Where there are long blocks of houses (or in informal areas), lack of pathways result in people moving within other people's houses. Where they do exist, they are not formalised (hardened with concrete), and they become dangerous on rainy days.

- *Drains near to dropped kerbs:* poor location of drains pose risks to all, including 'able-bodied' people.

All four participants were also asked about the **location of facilities** and how poorly located facilities affect them: for example, distances they travel to reach local facilities and community-wide facilities. Their response was based on the inadequacy of local facilities – forcing them travel unreasonable distances to reach those facilities. They also commented about the location of bus stops in Umlazi. They pointed out that the public transport does not penetrate into residential routes: it is restricted in the main routes. They would like to see an increase in the number of bus stops, not only in the main routes but also in the residential routes. With regard to shopping, most residents do it in the CBD and Isipingo because of high accessibility. They could hardly do any shopping in Umlazi Town Centre at unit W. The disabled people could benefit from the clustering of, for example, medical services and shopping facilities.

Because almost of the participants raised the issue of steep slopes, unpaved sidewalks; poor lighting on the streets; poor signage, etc, they were asked how they actually cope with these barriers. The wheelchair user stated that they heavily rely on family members, relatives, etc. for help. The blind and visually impaired people also rely on help from relatives, family members, and community members.

However, they also pointed that, in certain cases, they become familiar with certain areas, and making it easier for them to navigate the environment without help except in busy roads where there are inadequate crossing areas or poor traffic calming methods. Because of environmental barriers, they cannot have independent living

They were also asked as to who is /should be, responsible for 'universally accessible' environment. They pointed out that it was the responsibility of the government, especially local government to make sure that there are adequate infrastructure / facilities, and that those facilities are located in areas that are easily accessible to public transport.

Disabled people felt that they are being excluded from participation in planning-related matters. They felt that they should be included in planning process so that their needs could be taken into consideration. They also felt that they should be invited during important meetings so that they could have their inputs.

The visually impaired and blind people felt the needs of wheelchair user's are more taken care of than theirs. They pointed out that decision-makers should treat everybody's needs on equal basis with wheelchair users.

Conclusion

The problems of the disabled people range from poor design of streets, poor location of facilities to lack of accessible transport. Providing adequate infrastructure or facilities within reasonable walking distances could also solve the problems of barriers. All these concerns cannot be addressed if disabled people themselves are not part of the planning process. They should be invited in planning related meetings, so that they become part of decision-making. In that way, their concerns could possibly be taken into account during the detailed implementation of the plans.

While visually impaired, blind people, and wheelchair users are all affected by built-environment barriers – visually impaired and blind people felt that the needs of wheelchair users were more taken care of than theirs: wheelchair users do not represent the 'whole community' of disabled people.

6.2.3 Focus Group Information Collection

As explained in the methodology section, the aim of the Focus Group Method was to get disabled people together to discuss a specific topic – “disability and the built environment”. However, this was not a problem-solving session, but an interview.

The survey questionnaires and in-depth interviews provided the researcher with separate versions of disabled people’s concerns. The focus group served to reconcile some of the findings derived from the other research methods mentioned above. It was not as detailed as was supposed to be, because other research methods had already filled some of the loopholes in the data collection. It was matter of clarifying some ‘vexed’ questions. The disabled people themselves are not the same. So it was critical to investigate whether or not there are any clashes between various forms of disabilities that might need special attention in planning and design.

The focus group identified clashes in the design of streets, in particular. The blind and disabled people felt that their needs were not fully taken care of than that of wheelchair users. The felt that the only thing the government knows is the building of ramps and dropped kerbs, which benefit wheelchair users only. The point was raised that the wheelchair users do not actually represent all forms of disabilities. And this should be taken into account when the government provides infrastructure or facilities in order to ensure that space embraces equity.

Conclusion

The wheelchair users do not actually represent all forms of disabilities. Special clashes in the design of physical environment should be clearly identified to make sure that the design solutions are beneficial to all forms of disabilities – so as to create equity in the built environment.

6.3 SURVEY QUESTIONNAIRE

As stated in the methodology section, 80 disabled people of Umlazi were surveyed in order to hear their views about the disabling barriers in the built environment. Their views about ‘attitudinal barriers’ were also captured in the survey. The sample size of 80 disabled people comprised of 30 wheelchair users; 30 visually impaired, and 20 blind people. The *Sampling Method* employed herein is explained in the Methodology section (2.4.2.2:*supra*).

56% of disabled people were found in institutions and organisations for disabled people. Some of them stayed there; some of them were there either for help or, projects or educational purposes. 44 % of them were identified through the use of physical addresses and telephone numbers (membership list) furnished by the organisations for disabled people. The sample population consisted of 44 % males and 56% females. This sample population was derived from the age cohorts in table 1 (see below). The analytical criteria for this survey involve three broad aspects – that is, *location of facilities (local and community-wide facilities), detailed design of facilities, and urban form elements* illuminated in Chapter 3 of this work.

Table 1: Age Cohorts of disabled people surveyed.

Age cohorts	No. of Males	No. of Females	Total: sample size
10 – 18	-	-	-
19 – 27	8	7	15
28 – 36	8	12	20
37 – 45	10	10	20
46 – 58	4	6	10
59 – 67	2	6	8
68 +	3	4	7
Total	35= 44%	45 = 56%	80 =100%

6.3.1 Mode of Transport

6.3.1.1 Private cars

Out of the 30-wheelchair users surveyed, none had access to private cars that are specially designed for their mobility needs. All disabled people surveyed do not own the normal private cars, either.

6.3.1.2 Public Transport

(a) **SUKUMA– (Buses specially designed for mobility needs of Disabled people)**

All 30 wheelchair users surveyed were using *SUKUMA* as their main mode of transport. All visually impaired (30) and blind people (20) surveyed were using *SUKUMA* as an ‘alternative’ transport. However, some uses it as their main mode of transport. This includes individuals whose ‘fixed’ time schedule always coincides with the fixed route and time schedule of the bus [see 6.3.1.3 (a)]. They also have an access to ‘normal’ buses

(b) **Normal bus**

None of the wheelchair users had access to ‘normal buses’ because they are not designed to accommodate their mobility needs. Both visually impaired and blind people were using ‘normal’ buses as their main mode of transport. They also have an access to *SUKUMA* as an ‘alternative’ transport.

(c) **Taxi**

40 % of wheelchair users were using taxi transport only for compelling reasons. The taxis are not designed to accommodate the mobility needs of wheelchair users.

The remaining 60% were not using taxi transport at all. 30% of visually impaired people were using taxi transport quite frequently.

They used it, together with normal buses, as their main mode transport. The remaining 70% did not use it frequently, and did not recognise it as their main mode of transport. They prefer buses.

40% of blind people were not using taxi quite frequently. They used it, together with normal buses, as their main mode of transport. The remaining 60% were not using it quite frequently, and they did not recognise it as their main mode of transport.

6.3.1.3 Problems associated with the use of public transport.

(a) SUKUMA

Despite the fact that SUKUMA is specially designed for people with limited mobility – it is not without its problems. Almost all users of SUKUMA identified similar problems regarding the service. There is only bus servicing the whole of Umlazi. The bus has a strict schedule: it covers only the early hours of the morning and afternoon. The bus does not service the area during the weekends.

(b) Normal Buses

Almost all visually impaired and blind people surveyed identified the problems regarding the behaviour of bus drivers. The criticism was that most drivers do not wait until all the passengers are seated. The passengers would accidentally be thrown against the seated passengers. Sometimes they get injured.

(c) Taxis

Almost all wheelchair users raised a problem about paying double fare in taxis i.e. wheelchair users pays for himself and for a wheelchair. Taxi drivers are often impatient because of the time consumed while wheelchair users are boarding.

The visually impaired and blind people complained about drivers not dropping them at the right places – leaving them stranded in confusing environments.

6.3.2 Detailed design of facilities (in section P, Q, U, S, D, V, and W)

There are number of physical barriers that were identified regarding the design of streets, location of street furniture, and the general inadequacy of facilities/ infrastructure that supports the mobility needs of the disabled people. These barriers are explained, in detail, in page 81-83 (*supra*). These barriers are also prevalent in other sections of Umlazi. Almost all the ‘barriers’ identified in the above-mentioned sections of Umlazi affect 75% of disabled people surveyed. 25% showed lack of awareness about the specific details of ‘barriers’ in the sections of Umlazi identified above: they could hardly go out as far as they would like to, because of physical barriers that restrict their mobility. If they want to go out, they would have to rely on family members/ relatives, or someone else to provide the right level of personal assistance.

6.3.3. Location of facilities

The size of the area in terms of its population should determine the provision of social services. For an area as large as Umlazi, one would expect a provision of a substantial amount of community and recreational facilities. However, this is not the case, as the provision of these facilities is very limited. Therefore, talking about the location of facilities should be modified with provision of adequate facilities at both local and community-wide level.

The detailed analysis of adequacy and location of facilities is dealt with under “Researcher’s observation” (see below). However, the surveyed group was able to say something about the location of the following facilities:

6.3.3.1 Local facilities

(a) Corner shops

70 % of disabled people surveyed are using corner shops. The majority of these corner shops are spaza shops, which do not follow any formal pattern of location. These shops are not accessible because the pathways are not formalised.

The remaining 25 % is using formal shops, which are located in units P, V (in the intersection), intersection of P and Q collector, and W (Umlazi Town Centre) (see **Map No. 7: end of Chapter 6**).

(b) Community-wide facilities

(i) Shopping centres

Almost all the people surveyed do their main shopping in the Durban CBD, Isipingo Rail, and Ezimbuzini (see **Map No. 7: end of Chapter 6**). None were using Umlazi Town Centre at section W. The shopping place in Isipingo Rail is located at the most accessible point, i.e. it is a good interceptory location and the confluence of road, rail, bus, and taxi routes.

6.3.4 Analysis in terms of Urban Form elements

This section is dealt with in Chapter 5 (see 5.4.1.5)

6.4 CONCLUSION

The results of the Survey simply shows that the problems of disabling environment range from poor detailed design solutions to inaccessible location of both local level and community-wide facilities. While some disabled people are able to access certain facilities – it is only those that are located at the most accessible points, e.g. Section V, Ezimbuzini Complex; Kwamnyandu railway Station, and Durban CBD.

While local facilities, such as 'Spaza' shops could benefit disabled people because they are located at short distance intervals – they are, however, inaccessible to wheelchair users, in particular, because of general lack of formalised pathways. With regard to public transport, blind and visually impaired people are generally in better position than wheelchair users, because they could use the 'normal buses' (including 'normal taxis') (i.e. buses not fitted with hydraulic lifts or high-floor buses). However, they cannot escape attitudinal barriers, particularly from bus drivers and taxi drivers.

CHAPTER 7:

CASE STUDY: *SYNTHESIS OF THE FINDINGS*

7.1 INTRODUCTION

While Chapter Six of this work has attempted to present, in detail, the findings of the case study – this chapter attempts to interpret or synthesise those findings based on the theories and/or concepts presented in the theoretical framework of this work. This dissertation purports to claim that the physical urban environment can be designed or planned (or adapted) to accommodate a wide array of possible abilities and disabilities – without necessarily introducing a series of *ad hoc, stigmatising* specialised solutions. This dissertation also claims that the creation of an urban environment adapted to the needs of everyone is not a utopian vision – it is an objective that communities must strive to fulfil and a concrete as well as theoretical possibility that appears worthy of major effort. All these claims find their mainstay from the concept of “Universal Design”, which is herein used as a main tool of synthesizing the findings of the case study. Nevertheless, the researcher has not lost sight of the fact that Umlazi is a *product of apartheid planning*. This factor *per se* has important implications in terms of how the researcher synthesises the findings. Consequently, the findings will be synthesised by categorising this work into three broad *overlapping* layers, that is–

- *Detailed design of facilities/infrastructure;*
- *Location of the facilities; and*
- *The urban form elements.*

7.2 THE DETAILED DESIGN OF FACILITIES/INFRASTRUCTURE

The findings of the study show that the disabled people of Umlazi are experiencing physical barriers in the built environment. These barriers range from unpaved sidewalks to lack of dropped kerbs, etc. (Chapter 6: *supra*). Looking it from the perspective of

physical design of detailed solutions, these findings suggest – at one end of the spectrum, that because of the barriers in the built environment, disabled people cannot live independent lives – and, at the other end of the spectrum, is their continual exclusion from participation in the mainstream society. The existence of these barriers in the built environment is herein explained by the use of the concept of “Universal Design”. This concept finds its mainstay from the social model of disability.

From the social model of disability, the existence of these barriers is part of the disabling society, and not the pathological body. The impairments of the disabled people *per se* are not ‘disability’, but the barriers in the built environment become a ‘disability’. As Oliver (1996) puts it, the individual limitations are not the cause of the problem but society’s failure to provide appropriate services and adequately ensure that needs of disabled people are fully taken into account in its social organisations. The question that arises, therefore, is how the society should accommodate the needs of the disabled people in the built environment. This can be done through realisation that the built environment can be adapted to accommodate a wide array of human abilities and disabilities. In the context of medical model of disability, the environmental barriers are not part of the problem of disabled people and the built environment is considered natural, and need not be adapted to accommodate the disabled people because the pathological body is a problem and not the environment. Consequently, there is a direct parallel between medical model and modernism. While the modernist planners recognized the impact of the environment on people, the response was not to accommodate difference, but to control human life according to the contemporary views on what was normal and desirable. The ideal form, which is evident in the design of urban environment, is that of a white, adult, able-bodied male. In assuming this uniformity, modernists neglected anyone who differed significantly from 'the ideal' of able-bodied individual.

Because so few people actually conform to this ideal, the modern planning project of physical environment was doomed to fail the majority of people who would populate its buildings and spaces. Clearly, this seems to be a position in Umlazi, where diversity was never taken into account, and the results of such approach are still evident even today. The interview with the planner also confirms that ‘planning for all’ has hardly

been embraced in planning – let alone emphasising the element of ‘disability’ in the urban space. The post-modernist account of disability opposes the grand approach of modernism. It views disability – *the disabling built environment* – as a social construct that limits individuals with disability. Post-modernism of disability is a reaction against the uniformity and social abstraction of modernism and it sought to re-emphasise difference and complexity in human life; humans are not uniform in their wants, needs and desires nor are they uniform in their aesthetic tastes. This approach runs parallel to the principles of universal design, which provide for and celebrate the difference and diversity of human life that populates the city.

From the social model perspective, the built environment has not evolved naturally to suit ‘normal’ human beings. The environment is not treated as given. Therefore, it is not an objective reality that must be negotiated by the disabled people. Its nature, origins, and *design* are questioned. Thus, it is in this angle that the concept of ‘universal design’ comes in.

The concept of Universal Design cannot be hastily imposed in areas like Umlazi. As noted in the introduction to this section, Umlazi is the product of the apartheid planning – in its forging of the apartheid city. The original design of Umlazi bears testimony that Umlazi was never designed or planned as a quality urban environment. The history of Umlazi tells that it was designed as a dormitory town for the ‘storage’ of cheap labour to be used in southern industrial area, when required. Many of the anomalies of planning cannot be reversed in Umlazi. As a result, ‘Universal Design’ will prove to be more useful in new developments than for retrofitting purposes. Therefore, the better approach is to say – what could be learnt from the (thoughtless) application of poor design solutions to human habit that is composed by heterogeneous members of the society.

From a Universal Design perspective, the built environment was not designed to be usable by all people, to the greatest extent, possible. Clearly, Umlazi was designed based on a traditional approach of “an average masculine human being”. Little attention was paid on the mobility needs of disabled people. One reason for this anomaly is that disabled people are treated as a small segment of society. Even today, as shown in the

interview with the planner, the inclusion of disabled people in the built environment is characterised by “we-they” dichotomy – resulting in planners thinking about “planning for disabled people”, instead of designing environments to seamlessly, imaginatively incorporate the access and mobility needs of different people. The better approach is to ‘plan for all’ – which recognises a spectrum of human-environment interaction. This difference, in the case of Umlazi, was not embraced throughout the entire design process, rather as an afterthought or a set of ‘add-on’ features.

In Umlazi, however, there have been some add-on features (retrofitting) in the built environment to solve some of the problems of built environment. For example, some of the pathways have been formalised, and this, in some other cases, involved dismantling the already existing structures, so as to accommodate add-on features. Designing special solutions for different segments of the population is a costly and cumbersome way to design places. It is more expensive to retrofit than to plan for all right from the beginning. Social equity would call for a more proactive planning approach. Truly speaking, there are cases where universal design increases costs. However, the costs of universal design increases costs by only 0,2%. This increase has been accepted in the South African Disability Policy. Access facilities should not be seen as specific mobility aids, but should be designed as seamless part of the built environment. “Planning for all” should be part of the general planning.

7.3 URBAN FORM ELEMENTS

As indicated in the theoretical framework, the concept of ‘universal design’ is not a euphemism for accessibility. It is a global, all-encompassing effort to remove any and all barriers from the environment and to create accessible, *comfortable, responsive spaces* for the most extensive population possible. Therefore, ‘universal design’ forms an integral part of urban form normative concerns illuminated in theoretical framework of this work. These normative concerns are *character (identity), Quality of the public realm, accessibility, choice, legibility, stress, and adequacy*.

The important question that arises is how all these elements are relevant to the disabled people of Umlazi. The interview with the planner shows that these normative concerns

are part of the general planning, and irresponsive environments affect everybody, including the 'able-bodied' people. However, this approach cannot be blindly accepted. Disabled people are the most affected members of our society. Emphasising the 'universality of design' helps identify the most affected groups and emphasise the element of 'disability' in the urban space. Difference in the people who populate city need not be ignored and should not be hastily generalised.

For disabled people, it is very important that urban spaces are designed to have special identity – thereby remaining recognisable, memorable, vivid, and engaging. Disabled people should be able to travel regardless of the purpose of the journey. If this approach is not sanctioned, such denial could, from a social model, be interpreted as exclusion and marginalisation of disabled people. Such denial is based on both modernistic account of disability and medical model that believe that problem of disabled people could only be solved by medicine and welfare, not by removing disabling barriers in the built environment, and create environments that accommodate the needs of all people, to the greatest extent possible. Therefore designing spaces that have identity could serve as an extension of home life and institution life, where disabled people are shackled. Responsive and caring spaces (e.g. trees, etc.) have special healing power, not only for disabled people, but also for 'able-bodied' persons.

The greatest message about Universal Design is that all elements of and spaces must be made accessible to and usable by all people to the greatest possible. Making all urban spaces accessible to disabled people is also a human right issue: everyone has a right to be treated with respect and dignity. Umlazi, as shown in the researcher's observation section, offers less choice in terms of movement within and outside the area and accessibility to community facilities. The sprawling nature of the development and the centralisation of facilities, to the extent that such facilities do exist, result in an environment that does not accommodate convenient pedestrian movement. The scale of the environment is based solely on the needs of the motorcar – despite the fact that there is low ownership of cars in Umlazi. Behrens and Watson (1996) advise us that the human scale should prevail over motorcar, particularly in areas where there is low ownership of the cars. Thus, 'Universal Design' requires an understanding and consideration of the broad range of human abilities throughout the lifespan. By

incorporating the characteristics necessary for people with physical limitations into the design of common urban spaces, we can make them easier and safer for everyone to use and more widely marketable and profitable. The benefits of universal design accrue to anyone, including able-bodied person. Therefore, there is a *raison d'être* for designing for all, rather than for disabled people. Human interaction in the urban space should guide the design, and not the fragmented approach, which is ignorant of the fact that “everyone is likely at some time to experience the misfit between themselves and the environment”. Aslaksen (*et al.*, 1997) puts it quite correctly that disability in relation to the physical environment is often defined as a disparity between an individual’s ability to function and the demands of the surroundings (Gap model *supra*: Chapter 3).

Umlazi also lacks the quality of the public realm i.e. the public spaces and routes that are attractive, safe, and uncluttered. Generally speaking, the roads are not safe for use by disabled people. The lack of (effective) traffic calming methods makes it difficult for disabled people to cross the busy roads. The lack of paved sidewalks is also evident in Umlazi. Universal design produces spaces that are less stressful.

Umlazi, as it stands, is not a aesthetic environment. Even retrofitting will not achieve the quality of place that is generally accepted. In a new development, the principles of universal design could successfully be combined with aesthetic principle.

7.4 LOCATION OF FACILITIES

The poor detail of physical design, as discussed above, is not the only barrier in the built environment that actually excludes disabled people from participating in the mainstream society. The way planners plan and locate community facilities will have certain implications in terms of how disabled people access those facilities. Thus, according to social model of disability, it is not individual limitations, of whatever kind, which are the cause of the problem but society’s failure to provide appropriate services and adequately ensure the needs of disabled people are fully taken into account in its social organisations (Oliver: 1996). The social model recognises that, by setting physical standards for the buildings, communities’ transportation patterns, and community rhythm – planning has defined unnecessary limits, which restricts the activities and the

quality of life of many members of the community. Inappropriate and poorly considered design solutions can result in reduced safety, great daily physical and mental strain and limited possibilities for activity.

7.4.1 An application of Universal Design and Planning Principles in Umlazi

The important question that arises is how these important ideas apply in the case of Umlazi. Before one could discuss specific details about Umlazi, it is important to illuminate how the concept of ‘universal design’ applies in this case. The main premise of Universal Design is that environments can be designed to sensitively, imaginatively and seamlessly incorporate the access and mobility needs of different people. Difference is embraced through thoughtful planning and design at all stages of any project. Therefore, the choice of solutions the planners make in the location of community facilities, including transport facilities, influences the extent to which the environment can be used by different people in the society. The concept of Universal Design makes a good combination with the planning principles of public facility network – the aim of which is to make facilities as accessible to the greatest number of end-user households as possible.

7.4.2 The location decision and inadequacy of facilities

The first thing to consider here that seems to affect the location decision of facilities in Umlazi is inadequacy of facilities. The section (see Chapter 5) describing the case study has revealed that, Umlazi as a low-income area presents a relationship between the inadequacies of facilities, poor location of facilities, and the distances produced by the inadequacy and inaccessibility of the facilities. In some cases, it is not necessarily about the inadequacy of facilities, but the inaccessibility of those facilities. The locational aspects of the following facilities are illustrative in this regard:

7.4.2.1 Clinics

In the whole of Umlazi, there are only seven clinics located in sections D, Q, U, L, H, and K. There seems to be a concern that that these clinics are not adequate for an area as large as Umlazi. However, the

provision of clinics depends on a particular threshold to support them.

Instead of providing additional clinics, the better approach is to create better internal physical linkages within Umlazi, so as to facilitate the sharing of facilities between the sections (Units) of Umlazi. The majority of the people surveyed said they were using Section D clinic because it was the most accessible one – being located along the Mangosuthi highway. Section U clinic is also accessible – being located along the South Spinal Road. For disabled people (including ‘able-bodied’ people), the lack of physical linkages has some cost implications in terms of transport i.e. they would have to take more than one taxi before they would actually reach these facilities. These factors increase burden in addition to limited mobility that disabled people suffer.

7.4.2.2 Public telephones

The public telephones are also a problem too. The telephones are few, and are at locations that are too far for some. In an area where large population is relying on public phones, one would expect a reasonable distribution of telephones. However, it is not possible to put them in each and every corner of Umlazi. Again, an uneven distribution of these phones affects disabled people. The protagonists of social model would not accept this kind of position, and they would, in fact, argue that, it is an exclusion of disabled people from public spaces and facilities. While public phones cannot be provided everywhere, the solution is to locate them in safe environments (e.g. accessible Spaza Shops, etc).

7.4.2.3 Transport facilities

The locational aspect of transport facilities is not without its problems. The general principle in planning is that the majority of dwelling units should be within a 2 minutes (minimum) walk of a bus

stop and the furthest house is less than 500m away (The Red Book, 1983). The majority of people in Umlazi do not own private cars, and are dependent on public transport, i.e. buses and taxis. The findings of the research show that the buses and the taxis use only the main road i.e. they do not penetrate into residential roads. This is problematic for elderly and disabled people, but also for the general public especially on very hot and on rainy days. It is also problematic for women when they have to walk long distances with heavy groceries. Walking long distances from the main roads at night could be very unsafe especially for wheelchair users because of poor lighting in streets. Even though the people of Umlazi raised these concerns, the researcher was not able to identify those areas that fall outside the reasonable walking distance to bus stops. Because of steep topography, even a reasonable distance might be a burden to a disabled individual. An accommodation of disabled people, in the case of facility location, has also to do with striking a balance between an 'acceptable' range/threshold (for able-bodied people) and the limited mobility of disabled people. Because their mobility cannot be fully accommodated in every planning 'scenario' – the public transport should, in cases where there are retirement complexes or institutions for disabled people, offer direct service to them to compensate for their limited mobility, where maximum distances are exceeded. The buses cannot penetrate the narrow residential roads, because they were not originally planned for public transport. The planning principle is that the local road network should allow for existing public transport operations to be complemented, providing additional opportunities for routing and service provision. It is now the function of the planners and engineers to investigate the nature of these concerns, and see whether it is possible to effect any rerouting to accommodate public transport, buses, in particular.

7.4.3 The location decision of facilities and the Sprawl phenomenon

The second thing to consider, which relates to the first point above, is the sprawling nature of development in Umlazi, and its implications for the disabled people of Umlazi. The sprawling development also affects the location decision of facilities – resulting in an environment that does not accommodate convenient pedestrian movement, but the needs of motorcars only. This seems to be the position in Umlazi. Because of sprawl phenomenon that is evident in Umlazi, you have few facilities that are geographically distributed in either few sections of Umlazi, or the whole of Umlazi – resulting in unreasonable distances to these facilities. For disabled people, it becomes difficult to access these facilities. Good accessibility calls for awareness in general planning and the detail of physical design. The new urbanists are entirely against the phenomenon of suburbia sprawl for it also diminishes the area's sense of urbanity. The concept of “Traditional Neighbourhood Development (TND)” was designed to curb this kind of situation.

7.4.4 The location decision and the centralisation of facilities

The third point, also related to the above is the centralisation of facilities and the negative implications for disabled people that are created as a result thereof. The general principle for effective planning of facilities dictates that the majority of facilities should be located in positions with maximum exposure, along main public transport routes – as opposed to being located to serve only spatially defined residential cell – as is the position with neighbourhood cell concept (Behrens and Watson: 1996). Public facilities that are functionally related should be located in clusters – that in the face of limited public funds, the sharing of resources between facilities is made possible. The spatial clustering of facilities enables a number of households needs to be satisfied in a single trip. The important question is how all this applies in the case study. Clearly, the way the facilities – both local and community-wide facilities – are located in Umlazi has certain implications for disabled people. The location of facilities in Umlazi follows the “regular cellular system” where all facilities are located at the centre of the neighbourhood, but not necessarily on major roads. For disabled people who suffer from limited mobility – it does not give enough choice. Behrens

and Watson (1996) criticise the internalised or introverted location of facilities of lower order facilities, to serve only single neighbourhood cells, making the sharing of facilities between cells difficult (see also Duan Plater-Zyberk & Company: 2002). This position, which is described by the authors above, is more evident in Umlazi.

In a low-income area, such as Umlazi, where there are inadequate facilities, you would expect a great sharing of facilities in order to minimise costs of facility provision and compensate for unreasonable distances that disabled people have to travel, either on foot or by transport, to reach those facilities. The sharing of facilities between sections of Umlazi is (also) frustrated by existence of closed road geometries in some sections – coupled with a general lack of pathways to link certain facilities or activities. These roads accommodate the needs of motor vehicles only. Again, the better approach is to investigate opportunities for the creation of internal physical linkages between the units of Umlazi. In a nutshell, the “regular cellular system” is not based on the facts of the way people live and meet, especially in the case of Umlazi. Based on the observed social patterns, and because of scarce facilities, in certain sections of Umlazi, people tend to leave their sections for use of facilities in other sections where they are either adequate or accessible.

The Introverted nature of facilities is made clear by an approach to planning of Umlazi units’ local centres (i.e. sub-centres). The unit centres are located at geographic centres despite the fact that the centres of activities are not necessarily the geographic centres. As a result, these centres have not been very successful. These centres are gradually being replaced by the informal stores (‘spaza’ shops). The location of the spaza shops does not follow any formal pattern. They are located at short distances, either on the major roads or minor roads, or access roads – giving the households a reasonable access. Some of these spaza shops are located at the intervals of less than 400metres (see **Map No.7: end of Chapter 6/8**). These shops reflect on the nature of dynamics that emerge in low-income areas – where people are not prepared to travel more than 5 minutes for a loaf of bread. While the spaza shops are very useful –

some of them are not accessible to disabled people, because of the lack of formalised pathways.

Umlazi Town Centre, which is located at section W (“Emaweleni” – Zulu name), is not necessarily introverted in the strict sense, as illuminated by Behrens and Watson (1996). In terms of accessibility, the Town Centre is not well located. It is (also) located at the geographic centre, which ignores the movement patterns. It is neither accessible from Spine road, nor at an interceptory location (e.g. railway stop), such as Isipingo Rail. Its planning was, indeed, a Pandora’s Box of some sort. It was based on unreasonable assumptions of statistical calculations for facilities. The best position for Umlazi Town centre should be and is section V at the entrance of the township. This position would have served as an interceptory point – partly preventing the money from leaving Umlazi to Durban CBD, Isipingo Rail, and Ezimbuzini (“Gina”) (see **Map No. 7: end of Chapter 6/8**). The findings of the research (survey questionnaire) show that the majority of the disabled people are not using Umlazi Town Centre – instead the Durban CBD, Isipingo, and Ezimbuzini are used, because of high accessibility. Isipingo, which is located outside of Umlazi, hijacks a lot of Umlazi money. The introverted nature of units’ local centres, plus an inaccessible Town Centre – which ignored the complex, rich, and concrete patterns of social life in Umlazi, have certain implications, not only for the disabled people, but also for the able-bodied people.

7.4.5 An appropriate planning system for the location of facilities

The question that arises, therefore, is what could be an appropriate system for the location of facilities in an area as Umlazi, where the existing facilities are dysfunctional because of poor planning approaches employed in the past. But before identifying the appropriate system, the distinction should be made between the locational aspect of low order and higher order public facilities. The former should be located at lower order road intersections along important public transport routes, while the latter should be clustered around highly accessible public transport stops, adjacent to major road intersections (Behrens

and Watson, 1996). The low order roads include local access roads as well as local distributor/ collector roads – while the high order roads include arterial roads, in particular (The Red Book, 1983). The locational aspect of (these) facilities has important implications for disabled people. In Umlazi, there are few clear, distinct major collectors for both buses / taxis and for the location of unit centres/sub-centres. Consequently, the collector roads or local roads should, therefore, be planned to reconcile the diverse requirements of a multiplicity of users, with the recognition that inevitably no one function will operate with optimum efficiency. The interview with the planner shows that the planners can influence the degree of barriers in the built environment that affect disabled people. The planner recommended that access and space standards should be used as minimum thresholds not optimum targets for facility locations. He commented:

“Certainly, disabled people are likely to benefit from proximity to, or a ready means of accessing, shops, amenities, health care and other services, as well as their own support networks. Much will depend on the configuration of facilities not only on the site, but also in the surrounding area”

Based on the observed social patterns in Umlazi, the “regular cellular system,” as discussed above, is not an appropriate planning system for the location of facilities. People are disobeying the ‘rules’ the planners imposed on them. To make an example, the introverted pattern of development of Umlazi is not supported by, and lacks any linkages in the form of formalised pedestrian routes. As a general principle of planning, pedestrian routes should be located to provide the shortest practical routes between activities – links through the area being direct and convenient, connecting and integrating the layout with surrounding areas.

In Umlazi, the pedestrians tend to make their routes – disregarding the road pattern. Some of ‘pedestrian-made’ routes are located in steep areas, and do not follow the contours of the area. In this way, they fail to minimise the built environment stress or barriers and compensate disabled people for their limited

mobility. In some cases, pedestrians would create their small bridges across streams within Umlazi. Some of these bridges are narrow and unstable. In certain cases, lack of these routes result in people moving within other people's houses. These 'pedestrian-made' routes arise because of the need to find shortest possible routes to certain facilities. For disabled people, the implications are huge. Even for able-bodied people, it is difficult to navigate this kind of environment.

The "overlapping cellular system" is better as compared to "regular cellular system" – because it allows for partial clustering and scattering of facilities i.e. it increases the possibility of choice. The location of shops on the edge of the neighbourhood and on arterials/ major collectors seems to defeat some of the weaknesses of "regular cellular system," as critiqued by Behrens and Watson (*supra*).

While the "diffuse non-cellular system" curbs some of the anomalies of "regular cellular system" – it does not encourage 'clustering' of facilities, which seems to be more beneficial to disabled people. While scattering of facilities at accessible points may be appropriate in Umlazi, large-scale scattering may discourage clustering.

While "overlapping cellular system" and "diffuse non-cellular system" may have some advantages for able-bodied people, and to a lesser extent, disabled people, they are not appropriate systems for the location of facilities. The "regular cellular system" has not been successful in Umlazi. The node/ "corridor system" – using Neo-Traditional road focus on facilities (or sub-centres) would be best solution for Umlazi.

The Northern spinal road (Mangosuthu highway), in particular, presents a potential opportunity for the development of activity corridor system. The northern spinal road with the series of emerging nodes along it, such as the Unit V intersection, Kwamnyandu Station, Lindokuhle Station, and Zwelethu station (see **Map No.7: end of Chapter 6/8**) presents an ideal opportunity to

establish a clear structure at the level of Umlazi as an entity. Umnyandu station could contain substantial commercial potential: it is supported by Umlazi stadium, markets, and taxi facilities. Next to the station is a major community hall, which is also used as a pension pay point. Umlazi sections should be linked into existing activity systems such as the Isipingo rail, Reunion station (at Glebe), and Ezimbuzini complex. The findings of the research seem to show that disabled people find these ‘nodes’ to be most accessible: they buy their groceries in Ezimbuzini, section V, and in the Durban CBD. The Unit Z node also presents an opportunity for its development: it is located at the intersection of the southern spinal road with P-Q-Z collector road (see **Map No.7: end of Chapter 6/8**).

7.5 CONCLUSION

The built environment in Umlazi is entirely informed by a modernist approach of planning. The environment does not accommodate the mobility needs of disabled people. Their problems are generally defined by the poor detailed physical design solutions, to poor location of community facilities, and poor urban form. The physical environment was planned based on the standards of ‘able-bodied’ people – at the expense of those who have limited mobility. However, the prevailing disabling environment in Umlazi is not a novel issue. It was produced by the apartheid planning – in its forging of the apartheid city. The history of Umlazi bears testimony to the current disabling built environment in Umlazi. Umlazi was never planned as a quality urban habitat, but a dormitory township for the storage of labour to be used in the southern industrial area. Therefore, it was very important for the Researcher to synthesise the findings of the study, with this kind of understanding in mind. Consequently, the concept of ‘Universal Design’ had to be located at the intersection of history and the current situation in Umlazi.

CHAPTER 8: RECOMMENDATIONS

8.1 INTRODUCTION

While Chapter Seven of this work has attempted to synthesise the findings of the case study – this chapter seeks to identify the ‘learning points’ of the case study. Basically, the chapter is about: what can be learnt from those areas that were planned or designed with little consideration of accommodating disabled people in the built environment. However, these recommendations acknowledge the fact that Umlazi is an apartheid city – a product of apartheid planning. This factor *per se* has important implications in terms of how the researcher makes recommendations thereof. Furthermore, the recommendations acknowledge that some of the ailments of the built environment cannot be reversed through retrofitting. The examples in this regard are the broad land uses and locational aspects of certain facilities. Retrofitting will prove to be very useful, particularly in the detailed physical design solutions to facilities or infrastructures. Thus, the recommendations made herein have implications for retrofitting of existing structures as well as accommodation of disabled people in new developments. Even though, Umlazi was chosen as the case study, the “disabling built environmental barriers” identified in Umlazi are common in other South African “black” townships. However, these recommendations also have some important implications even for “white suburbs” where there is low degree of disabling barriers because the areas are “reasonably” serviced with good infrastructure or facilities. Consequently, besides the all-encompassing recommendations – recommendations are categorised into three broad *overlapping* layers, that is –

- *Detailed physical design solutions to facilities/ infrastructure;*
- *Location of the facilities; and*
- *The urban form elements.*

These broad overlapping layers, however, constitute part of the *general (new developments)* and *case study-specific (retrofitting)* recommendations.

8.2 GENERAL RECOMMENDATIONS (FOR NEW DEVELOPMENTS)

8.2.1 DETAILED PHYSICAL DESIGN SOLUTIONS TO FACILITIES OR – INFRASTRUCTURE

8.2.1.1 Accessibility in the road and pedestrian environment

(a) Footpaths and Footways (pavements)

The underlying purpose of a pavement is to provide safe, easy access for everyone walking or using wheelchair. To achieve this purpose, it is recommended wherever possible:

- Pavements should be sufficiently wide, depending on the location or function, so as to facilitate circulation. To achieve walkable communities, sidewalks with a separation (1.1 – 2.1m)¹ from the roadway may have to be provided on both sides of all major roadways. The separation should have trees. This recommendation should be achievable in most cases, especially on arterial roads carrying heavy traffic – but where pedestrians have an access to such roads.
- The surfaces should be paved, non-slip, well maintained and joints between paving slabs should be closed and flush to avoid catching the small wheels of a wheelchair. And the edges of pavements should be clearly defined to give sufficient guidance to blind and visually impaired people. This should be achievable on major roads that accommodate public transport, and where those roads service certain facilities.
- Covers and gratings should be non-slip in all weathers and flush with the pavement surface
- There should be lighting schemes for pathways to assist wheelchair users and the elderly people.
- For blind and visually impaired people, nothing should overhang the footway or footpaths (obstructions such as signs, tree branches, etc) to a height of less than 2 100 mm (preferably 2 500mm)²

- Where it is not possible to avoid having obstacles, pathways and footways should furnish visual contrasts to assist visually impaired people.
- Where the area has steep gradient that begins to cause difficulties for manual wheelchair users, in particular, the footpaths should have level areas or resting places (preferably 1 800 mm long) at intervals of 10 meters.³ Wherever possible, the footpaths should follow the contours of the area to minimise the disabling nature of the environment.

(b) Street trading/ vending

Where the street traders have been granted a right to do their informal activities on the streets or along pavements, the local government should exercise control in terms of the space the activities consume – otherwise such encroachment onto the pedestrian areas could be dangerous for visually impaired and blind people. For wheelchair users, such encroachment narrows pavements –resulting in restriction of navigation freedom.

(c) Signage or tactile surfaces (on major “paths”)

Access routes to facilities should offer sufficient clues to both visually impaired and blind people. In providing tactile paving, sufficient attention should be paid to any clashes between blind people (including visually impaired people) and wheelchair users. The tactile paving necessary for people with visual impairments can cause discomfort and difficulties for wheelchair users. Where textured paving is necessary, rounded textures should be used. The tactile surfaces should serve as both ‘warning tool’ for a potential danger zones and as ‘information floors’. Where they are used, they should provide sufficient and reliable information i.e. they must be sufficiently “rough” and “rigorous” for blind people – but should not restrict circulation

freedom of wheelchair users. Because most visually impaired people still have some vision, tactile surface should be readily distinguishable by colour and tone from the general pedestrian area. Warning surfaces should be use in the following circumstances⁴:

- At pedestrian crossings (where colour may be used to differentiate between controlled and uncontrolled crossings)
- At the edges of rail, tram and raised bus platforms
- To warn of other hazards: steps, level crossing, and the approach to on-street light rapid transit platforms.

Information surfaces can be used to:

- Provide a guidance route through large open spaces or through complex pedestrian environments. For blind and wheelchair users, wild or 'naked' spaces are confusing and difficult to navigate.
- Indicate the presence of facilities such as bus stops, telephone kiosks, tactile or talking information services, toilets, etc.

Audio/tactile pedestrian signal systems should be used in areas with large elderly and disabled population.

(d) Intersections/Junctions and road crossings

Junctions and road crossings are potentially hazardous for blind, visually impaired, and wheelchair users. To provide street road/street crossing which accommodate physical abilities of 'all', major intersections should be pedestrianised. Therefore, intersection design and mechanisms should be clear and understandable. Dropped kerbs are of great help to wheelchair users and should be provided at all major pedestrian crossing points. At side roads where there is space to do it, dropped kerbs should be set up on the side road out of the direct line of

the footway of the main road. This is to prevent blind people walking into the side road without realising it.

To help visually impaired people, when a dropped kerb is in the direct line of travel, a tactile surface should be laid to a depth of 1 200mm⁵ in a contrasting colour to the surrounding pavement. This will provide a warning to the pedestrians that they are approaching a road.

Busy junctions require some form of control to assist pedestrians across the road. This may be just a pedestrian crossing (“zebra”) or controlled crossings (traffic signals with a pedestrian phase and various other forms of control such as “pelicans” and “puffins”). Again all these crossings should have dropped kerbs and tactile warnings surfaces.

Further help can be given to visually impaired pedestrians at controlled crossings by means of audible and tactile signals. The traffic lights with “bleep” systems should, where possible, be provided as a standard system of traffic control – and not as a special assistance to blind and visually impaired people. The system should be well maintained to avoid any possible danger posed by default.

The sound output of beepers should be designed with flexibility – so that it becomes modifiable by reference to the ambient (traffic) noise level to ensure that it can be heard over traffic noise but does not cause a noise nuisance at quieter times. This is very important in West street (Durban, South Africa) where there is “taxi terrorism” i.e. music played at high volume, high traffic volumes generated by taxis, in particular.

(e) Roadworks: holes

It is inevitable that from time to time repairs will have to be made to footways and pedestrian areas. When this happens, in cases of holes, the area where there is a hole, should be barricaded off with a continuous rail or hard structure. The use of plastics, as barricade should be avoided where, for example, the degree of danger is high, and the plastic could not be easily detected by cane, especially if it is loosely placed around the danger zone.

(f) Street furniture⁶

Street furniture should be located where it does not present difficulties for the wheelchair users, blind and visually impaired people. Basic design principles to be followed include, *inter alia*:

- Making changes in level obvious through the use of different coloured/textured paving.
- Avoiding use of kerbs: where they are necessary they should be clearly marked.
- Aligning and grouping together street furniture or planters, avoiding their random location.
- Providing seating, preferably with arms and backrests, in appropriate locations for elderly and disabled people.
- Ensuring that railings and other street furniture have a low rail enabling detection by blind people using a stick/cane.

8.2.2 LOCATION OF FACILITIES

8.2.2.1 Locations of facilities and planning guidelines

Certainly, disabled people are likely to benefit from proximity to, or a ready means of accessing, shops, amenities, health care and other services, as well as their own support systems – access and space standards, wherever possible, should be used as minimum thresholds

not optimum targets for facility locations [see below – 8.2.2.1(a) in particular].

(a) Public transport routes and bus stops

While distance of 400 metres apart have been accepted as acceptable for older people, a shorter distance (200m)⁷ to public transport stops would ensure greater accessibility for older and disabled people. In cases where there are retirement complexes, institutions for disabled people, on-site transport services may compensate where maximum distances are exceeded.

(b) Planning system for the location of both local and – community-wide facilities

In order to accommodate the special needs of elderly and disabled people, planners should avoid the application of any cellular system in the location of facilities. The internalised or introverted location of local (lower order) facilities to serve only single neighbourhood cell, makes the sharing of facilities between cells difficult especially in low-income areas.

Planners should encourage the clustering of functionally related public facilities to create choices for disabled people. The clustering of shopping and medical services, etc. could be beneficial to disabled people. The clustering of facilities on major roads presents a good choice for disabled people – enabling a number of household needs to be satisfied in a single trip. Essentially, some form of node/corridor system – using Neo-traditional road focus on sub-centres (or local facilities, in general) should be encouraged.

Also for community-wide facilities, the corridor system should be encouraged to facilitate accessibility.

8.2.3 URBAN FORM ELEMENTS

Planners, and other professional involved in the planning of physical environment, should ensure that they create responsive urban environment where all people can live – by taking into account the mobility needs of different people who are populating the urban space. The following urban form elements (see Chapter 3) should be adhered to:

- ***Character / identity of place:*** the places should have clear perpetual identity – being recognisable, memorable, vivid, engaging of attention, and being different from other locations. Planning ‘distinctive’ places is very important, particularly, for blind and visually impaired who need to have clear ‘mind map’ about particular areas, so that they could easily navigate the built environment. The monotonous regimentally development of neighbourhoods may create confusion for disabled people.
- ***Quality of the public realm:*** there is a great need for the creation of public spaces and routes that are attractive, safe, uncluttered, and work effectively for everyone. For disabled people, who suffer from limited mobility, it is crucial, for example, that the roads should have sufficient traffic calming methods to provide for safe crossing on busy roads.
- ***Ease of movement:*** accessibility of both local and community-wide facilities could be a crucial determinant of participation of disabled people in the mainstream society. The road layout should, as a general principle, facilitate both vehicular and pedestrian circulation. However, *motor scale* should not dominate over *human scale*, especially in low-income areas, where the majority of trips are made on foot. The provision of pathways enables the pedestrians to reach facilities, without necessarily consuming a lot of energy and time. The environment should provide choice to all its citizens.
- ***Legibility:*** disabled people should be able to establish clues and orientation within the environment. This is, particularly, important for both blind and visually impaired people who, to a large extent, rely on ‘mind map’ to navigate the built environment. If the environment does not have the recognisable structure, disabled people become the ‘sitting ducks’ of barriers in the built environment.

- **Adaptability:** it is very important that the environment is planned to promote adaptability for future changes. The example in this regard, is “retrofitting”, which may prove to be beneficial to disabled people, for the provision of facilities/ infrastructure, which was not originally planned as seamless part of the built environment, fit to be used by all people of different abilities and disabilities.
- **Adequacy:** public facilities should be as adequate as possible, in order to accommodate everyone: where there are, for example, inadequate, emphasis should be directed at placing those limited facilities at the most accessible points of the neighbourhood, or anything beyond it.
- **Stress:** the planning and design of the built environment should seek to provide ‘comfort’ for everyone. This could be done by making sure that all urban spaces are accessible and useable by all people, to a greatest extent possible. Therefore, design professionals should make sure that their ‘craft’ is functional for everyone.

All these elements, if reasonably adhered to, will make the built environment safe and useable by both ‘able-bodied’ and disabled people.

8.2.4 ALL-ENCOMPASSING RECOMMENDATIONS

8.2.4.1 Long-term integrated transport planning

To achieve *universally accessible public transport*, there should be a long-term integrated transport planning:

- To recognise the need for a long-term perspective (of at least 20 years) in transport planning – taking into account consideration for the long lead time for improvements to be implemented;
- Linked to the above, plans may be developed for gradual replacement of ‘normal’ buses (with wheelchair lift buses) over the estimated average service of 12-15 years in most cases⁸;
- To undertake long-term transport planning in coordination with land use planning to minimise, to the extent possible, spatial incoherence of built-up areas within and around urban centres, which is a key in increasing the cost of public transport service provision;

- To take into consideration, in transport planning, the entire transport chain with feeder and other connecting services, and not just a small number of stations for lift installation or one transport mode in isolation of overall connectivity, which will have minimal impact on diminishing the mobility deficit of people with disabilities and other transport-disadvantaged persons; and
- The government and other interested parties (donors) may, wherever possible, provide technical assistance in, and funding for, the planning and construction of universally accessible and user-friendly public transport systems.

8.2.4.2 Universal design principles ⁹

For the disabled people to be fully accommodated in the built environment, the principles of Universal Design should be adhered to in South Africa (see Appendix 1).

8.2.4.3 Universal design and planning principles

The Principles of Universal Design are not intended to constitute **all**-criteria for good design, **only universally usable design**. Other important factors such as aesthetics, cost, safety, gender, and cultural appropriateness must **also** be considered when planning and designing. The universal design principles should inform the South African planning and design disciplines. In practice, this could be achieved by marrying the principles of universal design and planning principles.

8.2.4.4 Teaching of Universal Design

In order to increase the levels of skills of people who could plan and design universally accessible built environments – the Universal Design as a concept and design philosophy – should be introduced in the tertiary institutions as part of the design/planning discipline.

8.2.4.5 Legislation

While the SAHRC, at one stage, proposes amendments to the current legislation governing accessibility and built environment – an alternative to further piecemeal amendment of the current legislation framework is to create one comprehensive South African disability Act. In this way, the rights of people with disabilities may be promoted in a more streamlined and mainstreamed way. The American with Disabilities Act (ADA) is good example of legislation, which is comprehensive.

8.2.4.4 Strategic access planning

The local government should have strategic access planning. With appropriate consultation, strategies should establish criteria that will help determine priorities for access improvements.

8.2.4.5 Planners and equity

There are steps that planners can take improve equity for people with disabilities:

- Participation from different groups of the population, which are affected by the planning;
- In the planning process (e.g. general plan revisions): make sure that the disability community is represented in the planning process;
- Use an assessment approach to learn about options in the community, and learn how to work with people with disabilities on planning issues;
- Reach out to recruit people with disabilities in the planning profession; and
- Develop long-term plans that reduce barriers, and make the environment more accessible for ‘everyone.’

8.3 CASE STUDY-SPECIFIC RECOMMENDATIONS ('RETROFITTING')

This section simply says, what should be done, where should be done. The 'how-part' of it is explained, in detail, in the 'General Recommendations' section (*supra*: 8.2).

8.3.1 Detailed physical design solutions to facilities or infrastructure

8.3.1.1 Activity nodes

The (emerging) nodes in Umlazi include: **Unit V-intersection; Section Z Node; KwaMnyandu Station; Lindokuhle Station; Reunion Station; Ezimbuzini ("Gina") Complex; and Isipingo Rail.** In order to increase the level of accessibility required for disabled people at these emerging activity nodes (including Durban CBD), the followings should, wherever possible, be considered for implementation:

- Formalization of **pathways and surfaces**, particularly at, and along Ezimbuzini complex, where there are signs of soil erosion.
- The part(s) of South Spinal road running along section Z node should be paved so as to provide sidewalks. **Section V-intersection** should be sufficiently pedestrianised.
- Where there are public phones, there should be tactile surfaces leading to the telephone kiosks.
- Special attention should be paid to **encroachment on pavements** by street vendors, particularly at Mangosuthu Technikon; section V-node; Ezimbuzini complex; Isipingo, and Durban CBD.

8.3.1.2 Pathways (all sections of Umlazi)

All existing informal pathways should be formalized. Where there are streams, bridges should be built. Where there are no existing informal pathways, and there is a chance for the development of new pathways, they should be provided, particularly, where there are long blocks of houses to provide shortest possible routes to facilities, and to facilitate pedestrians' movement, in general.

8.3.1.3 Traffic Lights

- All traffic lights along South Spinal road and Northern spinal road should be sufficiently maintained at all times. The traffic lights located along access route to Nduduweni Centre for the Disabled should be maintained at all times.
- The eThekiwini Municipality should regulate the level of noise produced by taxis (*e.g. music played at high volume*), in particular, in the Durban CBD, as this might cloud the sound output of traffic lights (“bleepers”).

8.3.1.4 Bus stops-shelters and bus routes

- All pathways leading to the bus stops should be paved. There should be sufficient tactile paving to enable blind and visually impaired to easily locate bus stops-shelters. For wheelchair users, dropped kerbs should be provided to link the carriage way with the level/surface of bus stops-shelters.
- Because of the concerns that buses do not penetrate residential routes, planners and engineers may investigate the possibility of rerouting, so as to compensate disabled people, elderly people, and women, where maximum distances are exceeded.

8.3.2 LOCATION OF FACILITIES

8.3.2 Activity nodes /corridors

- The following (emerging) nodes are well located, and should therefore, be reinforced: **Unit V-intersection; Section Z Node; KwaMnyandu Station; Lindokuhle Station; Reunion Station; Ezimbuzini (“Gina”) Complex; and Isipingo Rail (see Map No. 7: end of Chapter 8).**
- The KwaMnyandu station node consists of emerging markets, stadium; community hall, pension pay point; and taxi facilities. Therefore, this “clustering” of functionally related activities should be encouraged.

- Section V node, as an interceptory location, presents an opportunity for development of new enterprises.

8.4 CONCLUSION

To accommodate the needs of disabled people, they should be considered in new (Greenfield) developments and in ‘retrofitting’ circumstances. Some of these recommendations have cost implications. For a 9-year old democracy such as South Africa, in certain cases, designing for everyone, may represent real costs. Where the government (including private sector) cannot afford high quality solutions – cheap solutions may have to be favoured to curb any disadvantages to disabled people: e.g. instead of spending money on low-floor buses – buses fitted with hydraulic lifts may be appropriate.

While it is difficult (and costly) to do retrofitting, especially on broad lands uses / facilities – it may, however, be important to register certain ‘policy statements’ about the locational aspects of both local and community-wide facilities. Where, for example, an activity node (or local centre) has proved to be dysfunctional in many respects – it could be emphasized that such nodes not be supported or reinforced in future. The better approach would be to channel the limited resources to potential (or well located) nodes – thereby reinforcing what already exists. Where there is a potential for the ‘clustering’ of certain facilities – such process should be supported. In Section D, for example, there is a clustering that is starting to mature: e.g. Stadium; markets; community hall; pension pay point; and taxi facilities – being located along the Northern Spinal Road.

‘Retrofitting’ will prove to be most effective especially when tested on the detailed design solutions to facilities/ hard infrastructure, e.g. formalization of pathways, redesigning of streets, (and pedestrianisation of streets), etc. At this scale, ‘retrofitting’ could successfully be done in Umlazi.

ENDNOTES

¹ American with Disabilities Act Accessibility Guidelines (ADAAG)

² European Conference of Ministers of Transport (ECMT), 2000: 20).

³ Ibid

⁴ Ibid

⁵ Ibid

⁶ Some of these principles have been borrowed from: Rutland County Council (District Council). “Supplementary Guidelines: Access for the Disabled.” November 2001: www.rutnet.co.uk/rcc/planning/access.pdf

⁷ Planning and Land Management (PALM) – Department of Urban services “Location Guidelines for Community and Recreation facilities”: Australian Capital Territory Government, 1998.

⁸ Social Development Division, UN ESCAP. *Promotion of user-friendly transport for people with disabilities*, 1997-1998.

⁹ Copyright 1997 NC State University, The Center for Universal Design, an initiative of the College of Design. The principles of Universal design – compiled by advocates of universal design, listed in alphabetical order: Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, & Gregg Vanderheiden: See http://www.design.ncsu.edu:8120/cud/univ_design/princ_overview.htm

CHAPTER 9: CONCLUSION

9.1 INTRODUCTION

This dissertation has purported to claim that the physical urban environment can be designed or planned (or adapted) to accommodate a wide array of possible abilities and disabilities – without necessarily introducing a series of *ad hoc*, stigmatising specialised solutions. This dissertation also claimed that the creation of an urban environment adapted to the needs of everyone is not a utopian vision – it is an objective that communities must strive to fulfil and a concrete as well as theoretical possibility that appears worthy of major effort. All these claims found their mainstay from the hypothesis, which identified the concept of “Universal Design,” as a practical approach to solving, to a certain extent, some of the ailments of built environment that affect disabled people in South Africa. Central to this dissertation was also to answer the critical questions presented in Chapter one of this work. In a nutshell, the aim of this chapter is to test whether or not these questions plus the hypothesis have been answered as claimed in the preceding chapters of this work.

9.2 ANSWERING OF RESEARCH QUESTION AND SUBSIDIARY QUESTIONS

One of the questions posed was related to the disability policy and what it actually says about disability and the built environment in South Africa. As indicated in the problem statement, this dissertation is a ‘messenger’ of a Disability Policy – it responds to the Disability Policy, which inherently directs planners and other professionals involved in the built environment, to take reasonable measures to create “*universally accessible*” or barrier-free environments that accommodates the diversity of needs, and enables the entire population to move freely and unhindered. In relation to Disability Policy, it was claimed, in conclusion, that the policy objectives have not as yet been, and could hardly be, transformed into concrete realities for disabled people in South Africa. To prove

that the policy objectives have not been complied with, the question was posed, in relation to the case study (Umlazi), about the nature of the disabling built environment. It has been shown in Chapter 6 – introducing the case study – that the problems of disabled people in the built environment range from physical barriers produced by poor design of streets, inaccessible public transport, location of facilities, to generally lack of quality urban environment. In relation to these identified barriers, it has been shown that these barriers are, to a large extent, caused by the application of inappropriate and poorly considered design solutions, which result in reduced safety, great daily physical and mental strain, and limited possibilities for activity. Consequently, for disabled people, the provision of public services and the design of the built environment can be a crucial determinant of participation.

Through the application of a ‘social model’ of disability, it was shown that ‘disability’ is a product of a disabling society, and not the individual pathological body, as the medical model wrongly labels. It was also shown that there exists a close *nexus* between the ‘design standard’ dominated by ‘able-bodied’ person and the so-called ‘planning for the disabled people’. It was, therefore, argued that many of the problems of disabled people are caused by the fact that the design professionals do not actually recognise the ‘difference’ in the people who populate the city. This claim was justified by the fact that when the design / planning professionals plan the physical environment – the standard of the ‘able-bodied’ persons dominates the planning or design. It was further shown that barriers are partly exacerbated by the fact that planning professionals believe in “planning for disabled people”, instead of “planning for our future selves”. This dichotomy of “we-they” often fuels the exclusion of disabled people from the mainstream society (Welch, 1995). “Planning for disabled people” should not be isolated as thinking about as a separate group, instead of a spectrum of human-environment interaction. The premise of this argument was that, it makes sense that the environments be planned ‘for all’ – rather than for certain segments of society because “everyone is likely at some time to experience the misfit between themselves and the environment” (Preiser & Ostroff, 2003). As shown in Chapter 3, disability in relation to the physical environment is often defined as a disparity between an individual ability to function and the demands of the surroundings. The preceding paragraphs have so far, with the exception of, and in addition to the above-mentioned questions, attempted

to answer the questions related to: impact of disabling environment on disabled people i.e. exclusion from the mainstream society.

In the preceding chapters of this work, the researcher was supposed to raise a critical question of whether or not the impact of built environment produces similar experiences for people of different race, gender, including whether one is poor or rich. Even though the issue of gender was raised in the sub-subsidiary questions, it became necessary to 'ignore' it – not because it was unimportant, and to emphasise the other characteristics mentioned above. However, there are some important points to note about this issue.

The findings of the research, which are, however, not explicitly or formally captured here, shows that women, in many households, still have the main 'responsibility' (subject to one's degree of disability) for looking after children. In fact, some of the female participants interviewed had children. Also, women still bear the main responsibility for shopping. Provision of local shopping facilities and design of town centres are very important to disabled women, especially the ones who have to do the shopping trips without being accompanied by anyone to provide them with the right level of assistance. Their mobility in and around the shops and public buildings becomes restricted due to badly designed access and layouts, as well as lack of facilities such as toilets (and/or nappy changing areas), lifts, and seating areas. The research did not identify any specific issues from the men's side that might need special attention in planning.

This dissertation identified a close *nexus* between race and poverty. Black people who are disabled are more likely to suffer the negative impacts of built environment than white people. Apartheid planning coupled with poor infrastructure/ facility delivery in 'black' townships produced immeasurable inequalities, the results of which are still bolted in the streets and broader land uses of many black townships in South Africa. Generally, in 'white suburbs', the infrastructure is reasonably good, and the degree of disabling environment is low. Because of our history, black people are more exposed to poverty than the white people in this country. Implications for disabled people are that – at one end of the spectrum, the rich can afford certain services that could possibly minimise the impact of disabling environment and boost the low mobility – and at the

other end of the spectrum, black people cannot, and the result is their continual exclusion from the mainstream society. As indicated in the preceding chapters, Umlazi, for example, has four institutions for disabled people, and these institutions are not adequate because they also accommodate outside people. Some of the disabled people are trapped somewhere in the 'ghettoes' of poverty, and they do not even appear on the 'map'. Disabled people who stay in shacks provide a clear example in this regard: for them, the impact of disabling environment is immeasurable.

This dissertation also looked at the planning concepts and principles, which have, and some of which continue to be influential in the planning of physical environments. Because this dissertation also advocated safe and comfortable environments for disabled people, the gridiron street pattern could not be supported in its entirety. The premise is that, while, to a particular extent, it facilitates accessibility because of open road network – the intersections that take the form of 90 degree 4-legged junctions, have negative implications for the safety of disabled pedestrians. Because of this anomaly, the Traditional Neighbourhood Development (TND) was considered viable because of the modified grid, with "T" intersections and street deflections, to calm traffic and increase visual interest. Apart from this advantage the TND offers, is composed of some of the good principles of new urbanism. These principles are sympathetic to the needs of disabled people. However, they are not, of course, the panacea of all planning ailments. Related to this was also to investigate the impact of some of the planning principles pertaining to the locational aspect of both local and community-wide facilities.

This dissertation was very critical of "regular cellular system" (see Chapter 3). Some of the negative impacts of "regular cellular system" could still be identified in some of the South African townships. The example in this regard is Umlazi – the case study. Behrens and Watson (1996) are very critical of the internalised or introverted location of local facilities to serve only single neighbourhood cell. This, according to the authors, defeats one of the planning objectives – that is, sharing of facilities between neighbourhood cells, especially in low-income areas, where there are, often, service backlogs. Consequently, the "regular cellular system" could not be supported as an appropriate system for the location of facilities.

While the “overlapping cellular system” was isolated as a ‘much-improved’ system as compared to the “regular cellular system” – it was not identified as a ‘remedy’ for solving some of the planning ailments in Umlazi. While the “diffuse non-cellular system” defeats some of the weaknesses of the “regular cellular system” – the ‘scattering of the facilities,’ of which is encouraged by the former system, could not have the scale tipped in its favour against the ‘clustering of facilities,’ which seems to be more beneficial to disabled people.

Because of the anomalies associated with “regular cellular system,” and to a lesser extent, the “overlapping cellular system” and “diffuse non-cellular system” – the “corridor system” and/ “activity node,” using Neo-Traditional road focus on facilities, particularly sub-centres would be best solution for Umlazi. The premise behind the “corridor system” is that, it is better to have people taking public transport to reach certain places (i.e. nodes), where more than one needs could be satisfied in a single trip. Consequently, the system does not imply the imposition of over-simplified abstract planning concept of Neighbourhood units, onto complex, rich, and concrete patterns of social life that are evident, particularly in ‘blacks’ townships. Therefore, based on this observation, it was concluded that the way in which the planners choose the planning approaches or principles will have certain implications on the way the disabled people are accommodated in the built environment. Even though the impact of planning may appear to be remote – proper planning of land uses and community facilities will prove to be beneficial, not only for disabled people, but also for the majority of the population who do not see themselves as ‘disabled’.

9.3 AN APPLICATION OF UNIVERSAL DESIGN CONCEPT APPROACH

The important goal of this dissertation was to test the challenge posed by the hypothesis, which identified the concept of “Universal Design” as a practical approach to solving, to a certain extent, some of the ailments of built environment that affect disabled people in South Africa. The main premise behind the application of “Universal Design” was that environments could be designed to sensitively and seamlessly incorporate the access and mobility needs of different people. In this way, all spaces

and elements could be made accessible to and usable by all people, to the greatest extent possible. Because the principles of Universal Design do not actually exist in vacuum, it was thought that, in practice, the better route would be to marry the planning principles with the principles of Universal Design. However, Universal Design plays a 'father role' over general planning principles. Universal Design says to planners, apply your principles in manner that accommodates everybody in the built environment because the 'naturalness' of the physical environment cannot be accepted as an objective reality that must be negotiated by the disabled people.

Because of the cost implications in the design of certain facilities (or products), Universal Design needs to be matched with the realities of our economy. For example, universally designed buses and taxis are not something that could be achieved overnight. For a 9 year-old democracy such as South Africa's, 'barrier-free' buses are a best option. The example of a "barrier-free," is a bus fitted with hydraulic lift (e.g. *SUKUMA* pilot project: *supra*). While the issue of costs presents a reality, the State remains duty-bound to make sure that built environment is accessible to all people. General Comment No.3 of ICESR (Legal framework: *supra*) also emphasises that, "even in times of severe resource constraint...the vulnerable members of society can and indeed must be protected by the adoption of relatively low-cost targeted programmes."

In order to achieve equality in society, General Comment No. 5 (Para5) of ICESR states that parties are, "required to take appropriate measures, to the maximum extent of their *available resources*, to enable such persons (i.e. disabled people) to seek to overcome any disadvantages, in terms of the enjoyment of the rights specified in the Covenant, flowing from their disability.

9.4 COMMENTARY ON RECOMMENDATIONS

The recommendations made in this research were categorised into two broad sets of recommendations – *General recommendations (New developments)* and *Case study-specific recommendations (Retrofitting)*. With these sets of recommendations, it is, however, acknowledged that 'Retrofitting' will not be possible in its entirety – particularly, when

it is applied in broad land uses, and or locational aspects of certain facilities. It will prove to be useful only in the detailed design of facilities, e.g. pavements, formalisation of pathways, etc.

9.5 CONCLUSION (*AND FUTURE RESEARCH*)

In conclusion, the researcher does not claim ‘pure victory’ in the way the questions and hypothesis have been tested. However, reasonable attempts have been made to investigate some of the vexed ailments that affect disabled people in the built environment. While this work was concerned about the “disabling urban environment”, it would be interesting, in future, for anyone interested in “this-often-hijacked platform” of disability to do research on “disabled people in rural areas”. From the planning perspective, it is, with greatest respect, unthinkable how these “voices from the borderlands” could make a powerful case about ‘their’ exclusion from the mainstream society. However, one sees no reason why ‘they’ would not, if need be, raise some interesting points about the better location of pension pay points.

APPENDIX 1: PRINCIPLES OF UNIVERSAL DESIGN

The principles of Universal Design are not only applicable to built environment, but also to design of products, etc. Therefore, any reader who reads these principles should contextualise them – depending on the type of scenario to be investigated. If they are adhered to, they could, successfully, be applied in any scale of design or planning.

1. Equitable use

The design is useful and marketable to people with diverse abilities.

Guidelines

- Provide the same means of use for all users; identical whenever possible; equivalent when not.
- Avoid segregating or stigmatising any users
- Make provisions for privacy, security, and safety equally available to all users.
- Make the design appealing to all users.

2. Flexibility in use

The design accommodates a wide range of individual preferences and abilities.

Guidelines:

- Provide choice in methods of use.
- Accommodate right- or left-handed access and use.
- Facilitate the user's accuracy and precision.
- Provide adaptability to the user's pace.

3. Simple and intuitive

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines:

- Eliminate unnecessary complexity.
- Be consistent with user expectations and intuition.
- Accommodate a wide range of literacy and language skills.
- Provide effective prompts and feedback during and after task completion.

4. Perceptive Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:

- Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- Maximize "legibility" of essential information.
- Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- Provide compatibility with a variety of techniques or devices use by people with sensory limitations.

5. Tolerance for error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:

- Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- Provide warnings of hazards and errors.
- Provide fail-safe features.

- Discourage unconscious action in tasks that require vigilance.

6. Low physical effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines:

- Allow user to maintain a neutral body position.
- Use reasonable operating forces.
- Minimize repetitive actions.
- Minimize sustained physical effort.

7. Size and space for approach and use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Guidelines:

- Provide a clear line of sight to important elements for any seated or standing user.
- Make reach to all components comfortable for any seated or standing user.
- Accommodate variations in hand and grip size.
- Provide adequate space for use of assistive devices or personal assistance.

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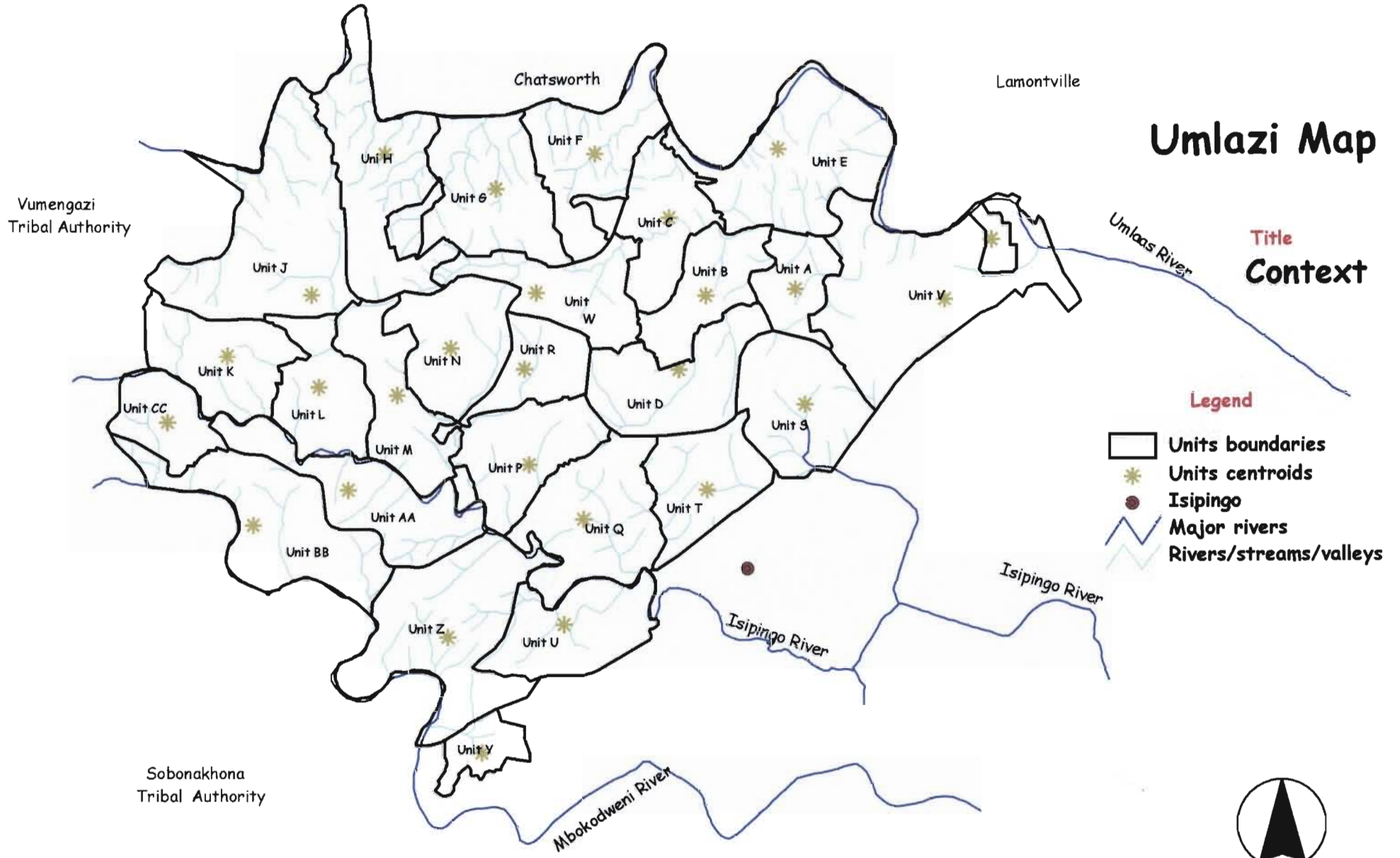
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Umlazi Map



Title
Context

Legend

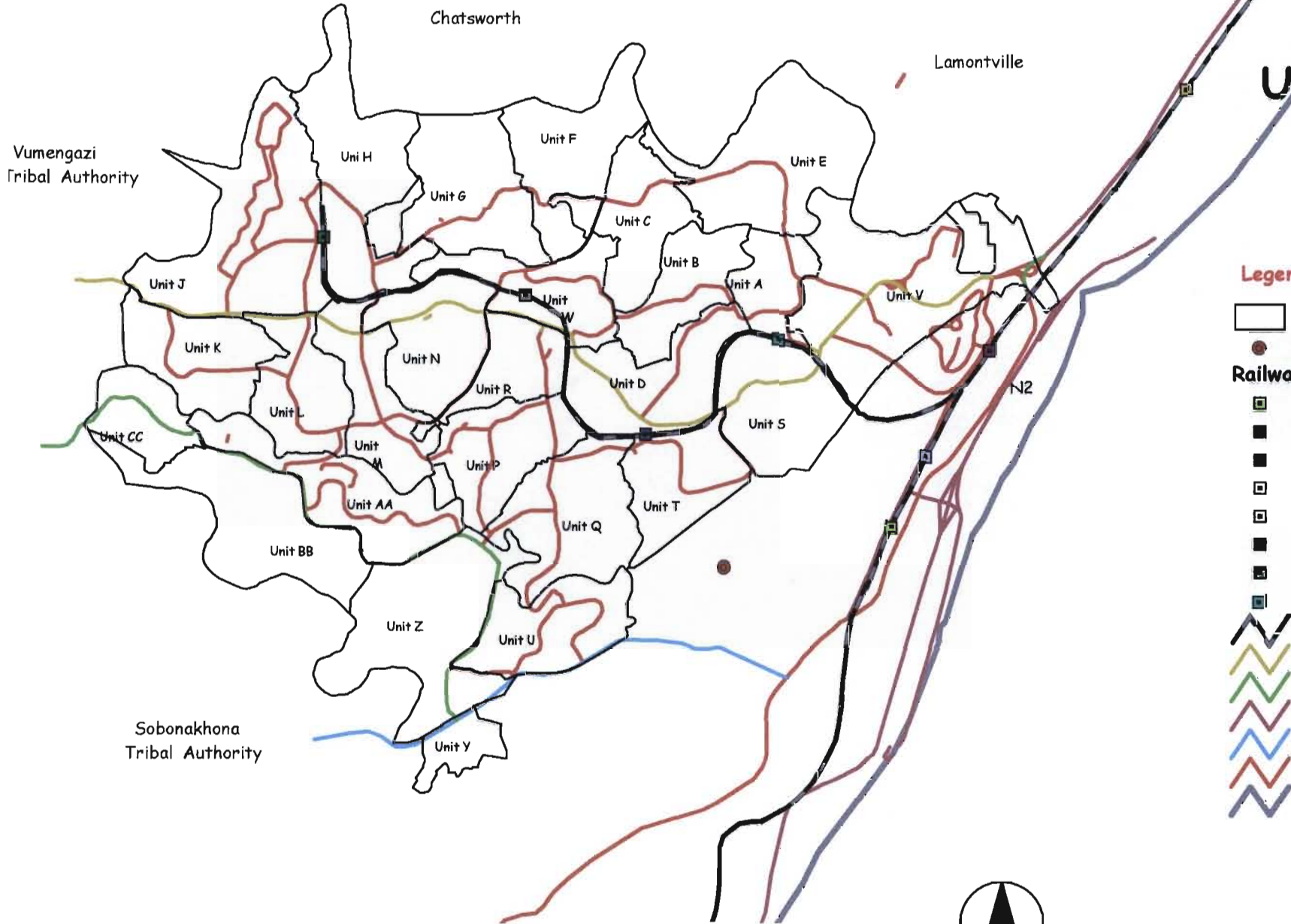
- Units boundaries
- Units centroids
- Isipingo
- Major rivers
- Rivers/streams/valleys

2 0 2 Kilometers

Prepared by S.G. Ndaba

Umlazi Map

Title Movement Systems



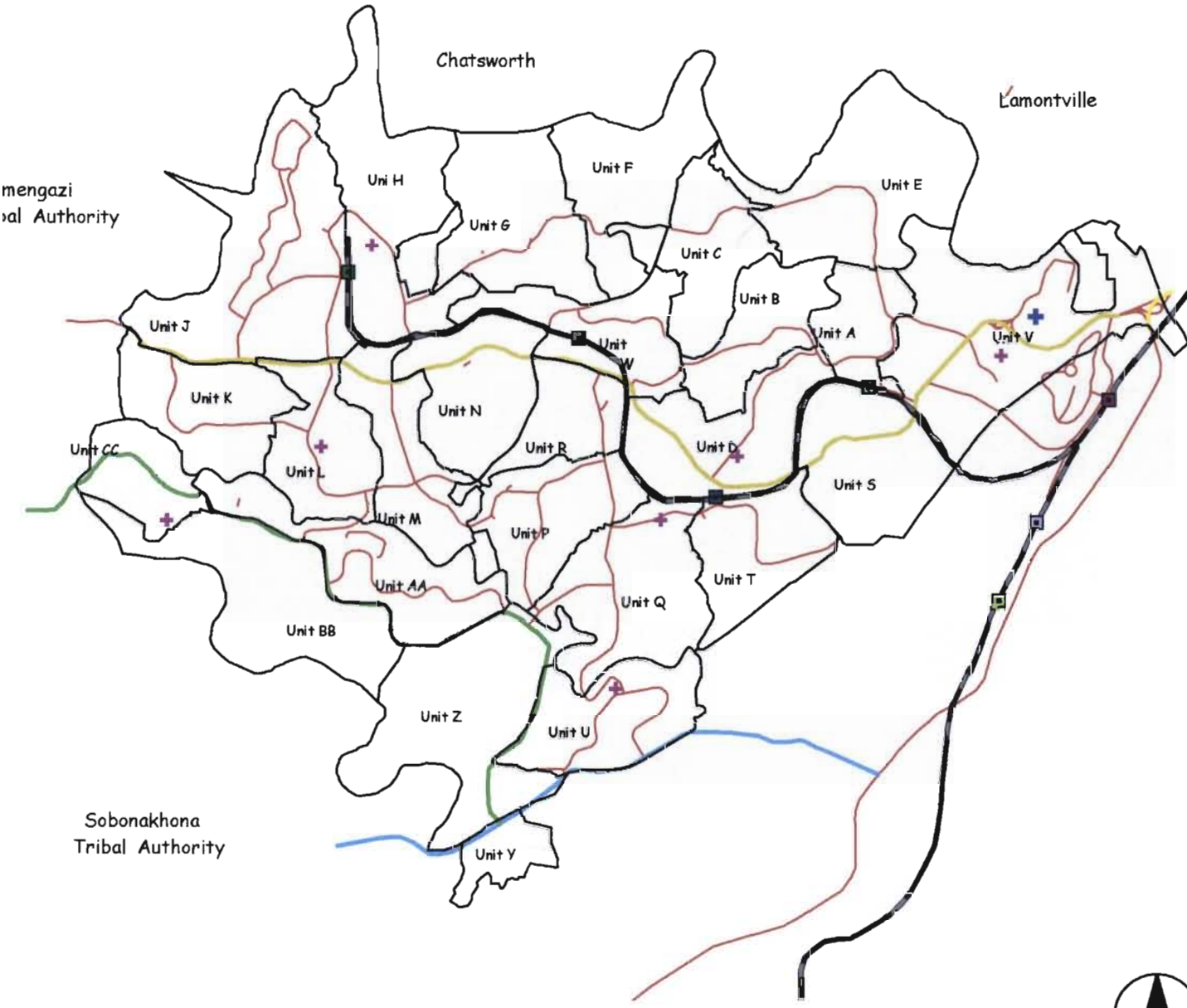
Legend

- Units boundaries
- Isipingo
- Railway stations**
 - Isipingo station
 - Kwa manyandu station
 - Lindo kuhle station
 - Pelgrim station
 - Racecourse Halt
 - Reunion station
 - Umlazi station
 - Zwelethu station
- Railway
- Northern Spinal road
- South Spinal road
- South Coast road
- M35 road
- Major Roads
- National Roads

3 0 3 Kilometers



Umlazi Map



Title Health facilities

Legend

- Units boundaries
- Prince Mshiyeni Memorial Hospital
- Clinics.
- Railway stations**
- Isipingo station
- Kwa mnyandu station
- Lindo kuhle station
- Pelgrim station
- Racecourse Halt
- Reunion station
- Umlazi station
- Zwelethu station
- Railway
- Northern Spinal road
- South Spinal road
- M35 road
- Major Roads



Umlazi Map

Title

Proposed Internal Linkages

Legend

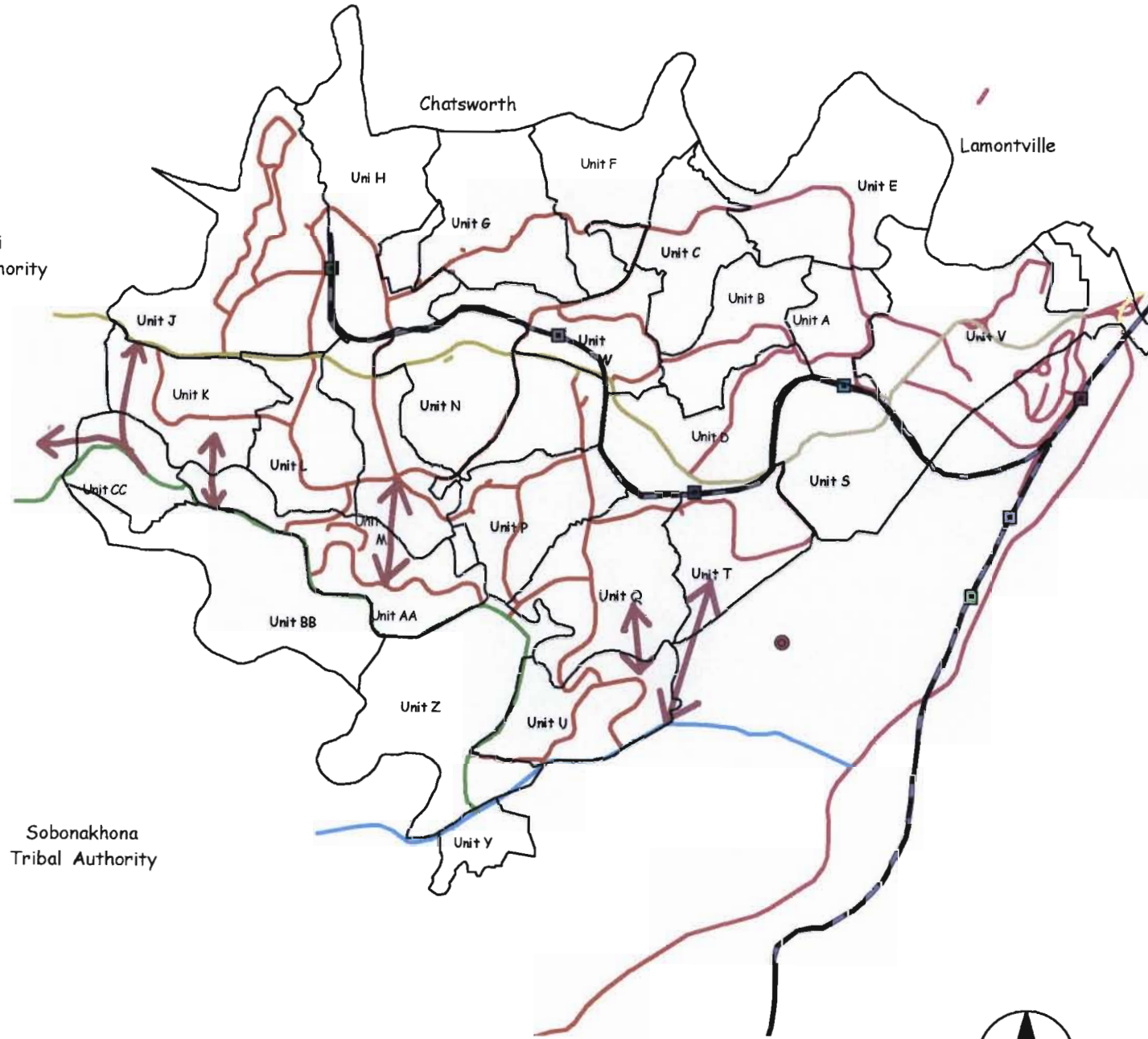
-  Units boundaries
-  Proposed Internal Linkages
-  Isipingo
- Railway stations**
-  Isipingo station
-  Kwa myandu station
-  Lindo kuhle station
-  Pelgrim station
-  Racecourse Halt
-  Reunion station
-  Umlazi station
-  Zwelethu station
-  Railway
-  Northern Spinal road
-  South Spinal road
-  M35 road
-  Major Roads

ingazi Authority

Sobonakhona Tribal Authority

Chatsworth

Lamontville



2 0 2 Kilometers



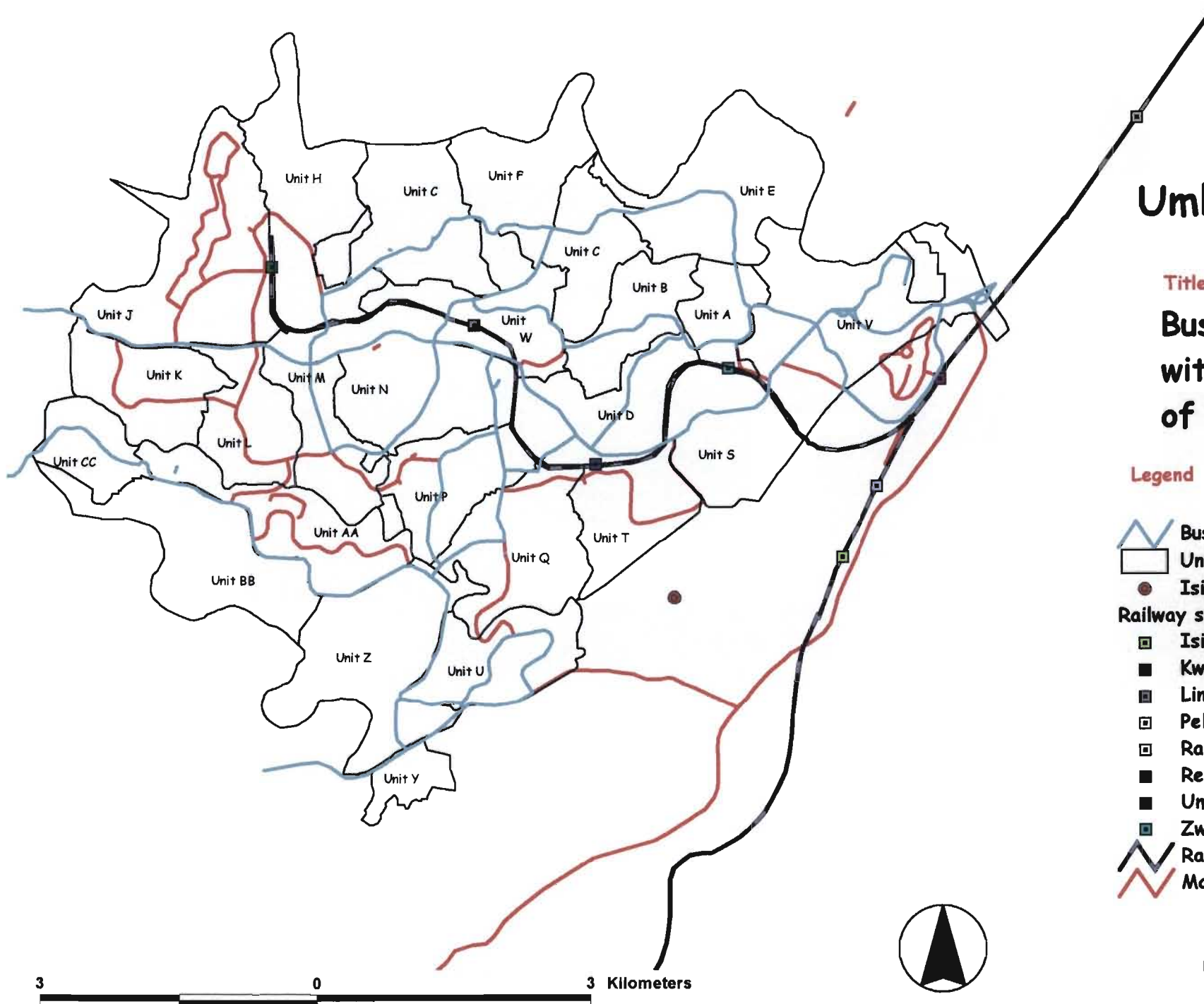
Prepared by S.G.Ndaba

Umlazi Map

Title
Bus Routes
within 'Units
of attention'

Legend

-  Bus routes in Study Area
-  Units boundaries
-  Isipingo
- Railway stations**
 -  Isipingo station
 -  Kwa mnyandu station
 -  Lindo kuhle station
 -  Pelgrim station
 -  Racecourse Halt
 -  Reunion station
 -  Umlazi station
 -  Zwelethu station
-  Railway
-  Major roads



Umlazi Map

Title

Education Facilities

Legend

-  Tertiary Institutions
-  Units boundaries
-  Schools
-  Libraries
-  Bus routes in Study Area
-  Isipingo
- Railway stations**
 -  Isipingo station
 -  Kwa manyandu station
 -  Lindo kuhle station
 -  Pelgrim station
 -  Racecourse Halt
 -  Reunion station
 -  Umlazi station
 -  Zwelethu station
-  Railway
-  Major roads

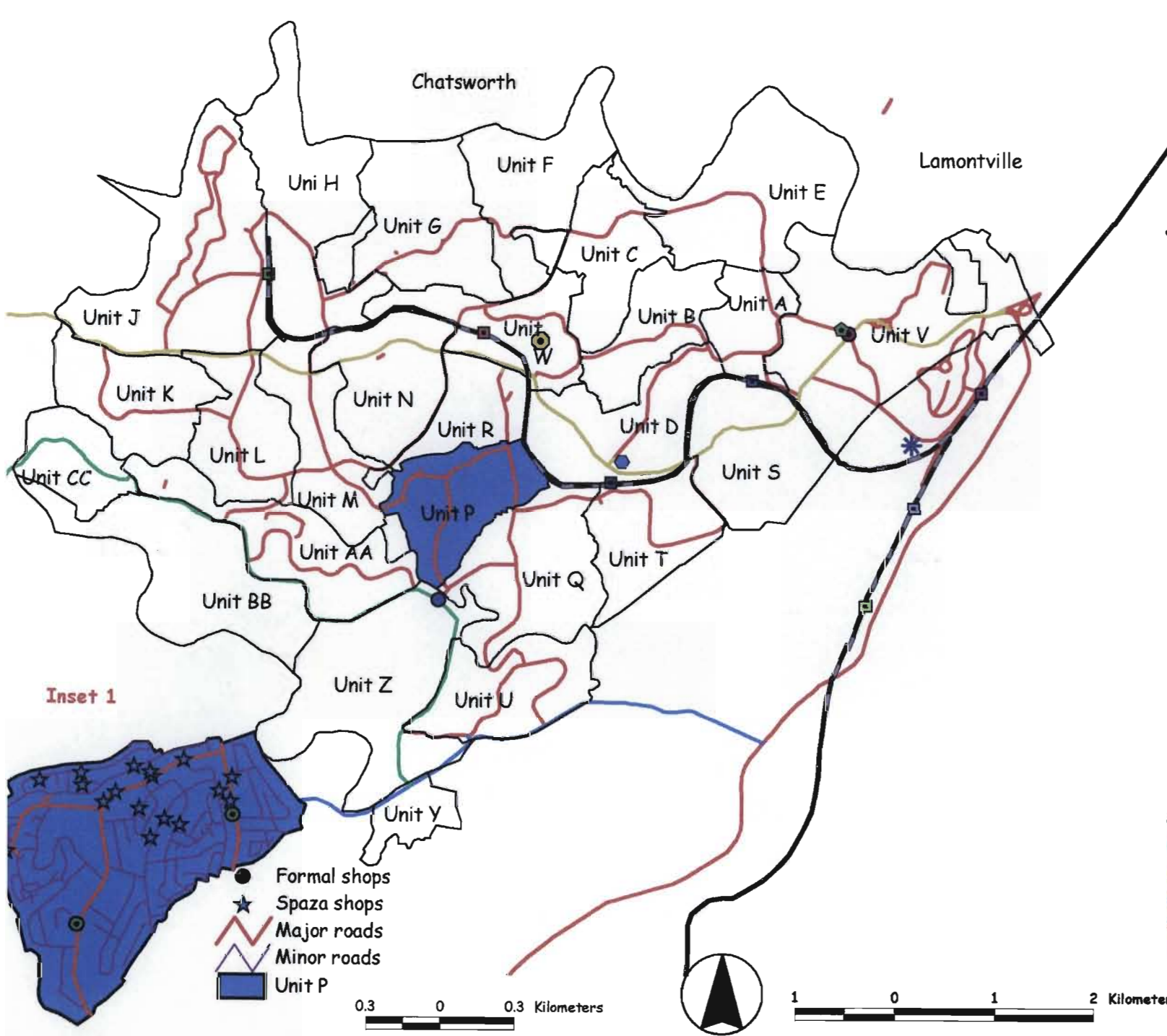


3 0 3 Kilometers

Umlazi Map

Activity Nodes, Spaza & formal shops

- Legend**
- Units boundaries
 - Activity nodes**
 - * Ezimbuzini (Gina) node
 - Formal shops_Unit D
 - ⊙ Formal shops_Unit V
 - ⊙ Isipingo node
 - ⊙ Umlazi Town Centre
 - Unit V Intersection node
 - Unit Z node
 - Railway stations**
 - Isipingo station
 - KwaMnyandu station
 - Lindokuhle station
 - Pelgrim station
 - Racecourse Halt
 - Reunion station
 - Umlazi station
 - Zwelethu station
 - ⚡ Railway
 - ⚡ South spinal road
 - ⚡ Mangosuthu Highway
 - ⚡ M35 road
 - ⚡ Major roads
 - Unit P



Inset 1

