ANALYSIS
We have chosen two different methods when analyzing our project area. The City Structure Analysis emphasis on the physical environment and how the citizens experience their surroundings while the SWOT-analysis highlights the strengths, weaknesses, opportunities and threats in the area investigated. The later is based on our own observations as well as Kevin Lynch’s analysis.

**City Structure Analysis**

In his book “The Image of the City” Kevin Lynch studies how the citizens structure their city and how they experience their surroundings. Lynch claims that the structure and the visual quality of a city are important to its citizens and that we should strive for a “legible city” with identity, structure and meaning. Together this creates an image of the city, imageability. (Lynch, K. 1960)

Lynch classifies the physical form of the city into five elements; paths, edges, districts, nodes and landmarks. He argues that by doing this, one can discover the city structure and understand what influences the imageability. The purpose for us to use this analysis has been to find the existing visual qualities in Kwazakhele.

**Paths**

“Paths are channels along which the observer customarily, occasionally or potentially moves. They may be streets, walkways, transit lines, canals, railroads” (Kevin Lynch, 1960, p.47). “Important paths in the city are the ones with major travelling, concentration of special use or activity or characteristic spatial qualities” (Lynch, K. 1960, p. 49-50)

The major paths in the area of Kwazakhele are Njoli Street and Daku Road. Along these roads there is a lively street life, with both formal and informal business established. A constant stream of minibus taxis stop and let people on and off since these streets constitute part of the major route for the minibus. Also the much informal organized Mavuso Road, Seyisi Street and Mblini Street, are well used.

Other paths are created by pedestrians. As the main transportation mode within Kwazakhele is walking there are a number of small roads and walkways used as shortcuts by pedestrians.

**Edges**

“Edges may be seen as barriers.” (Lynch, K. 1960, p. 47). “Edges are linear elements not considered as paths: they are usually, but not quite always, the boundaries between two kinds of areas or linear breaks in continuity: shores, railroads cuts, edges of development and walls” (Lynch, K. 1960, pp.62-63).

In the northwest corner of the intersection between Njoli Street/Mavuso Road, a row of houses, with entrances turned away from the street, create a wall. Also in the north end of the hostel area, the houses create a wall.

The busy streets of Njoli and Daku can be perceived as edges for pedestrians since they can be difficult to cross.
The informal housing area on the northern side of Mavuso Road is intended to be a storm water reservoir. As people who live here have blocked the pipes, the area does not flood\(^{19}\). If it would flood properly, this would occasionally create an edge.

Many of the fenced open areas constitute large barriers in the public environment.

**Districts**

“Districts are the medium-to-large sections of the city, conceived of as having two-dimensional extent, which the observer mentally enters “inside of” and are recognizable as having some common, identifying character.” (Lynch, K. 1960), p. 47). A district name also helps to give identity to a district”. (Lynch, K. 1960, p. 68).

We think that Kwazakhele is about the size Lynch would refer to as a district. If we would breakdown the area into what Lynch refers to as sub-districts (Lynch, K. 1960, pp. 167-169) by common identifying characters, there are two areas which differ from the rest; the Matthew Goniwe hostel area and the informal housing areas on both sides of Mavuso Road up to the corner of Mavuso/Daku Road.

The Matthew Goniwe hostel area has curved narrow streets and smaller plots than the rest of Kwazakhele. Here the brightly painted row houses in different colours stand out from the detached metro houses. Unlike the rest of Kwazakhele, the roads curve unexpectedly within the hostel area, which make it difficult to orientate. The fact that the hostel area has its own name also shows that it is considered a sub-district.

The areas with informal houses across Mavuso Road, built with less uniformed material, also create sub-districts. The plots are smaller and winded gravel walkways differ from the linear streets of the neighbouring areas.

**Nodes**

“Nodes are points, the strategic spots in a city into where an observer can enter and which are the intensive foci to and from which she is travelling. They may be primary junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another. Or the nodes may be simply concentrations, which gain their importance from being the condensation of some use of physical character, as a street-corner hangout or an enclosed square.” (Lynch, K. 1960, p. 47)

In this chapter the nodes are defined by the description of Kevin Lynches’ City Structure Analysis. His concept of a node is not fully coherent with the node concept that the NMMM uses which more focuses on economic activity.

Using the City Structure Analysis we have identified Njoli Square is an important node for the area and with the implementation of the Khulani Corridor it is likely to grow even more. This is a node for both transport and activity.

19 Interview with Galvin Flanagan, Storm Water Engineer, FST Consulting, 12th of December 2006.
Landmarks

“Landmarks are an external point-reference, but in this case the observer does not enter within them, they are external. They are usually a rather simple defined physical object: building, sign, store or mountain”. [...] Some landmarks are distant ones, typically seen from many angles and distances, over the top of smaller elements, and used as radial references” [...] “Other landmarks are primarily local being visible only in restricted localities and from certain approaches. These are the innumerable signs, store fronts, trees, doorknobs and other urban detail which fill in the image of the most observers.” (Lynch, K. 1960, p. 48).

There are few landmarks in KwaZakhele. A significant one is the power plant, with its six chimneys it is visible from a large part of KwaZakhele and it offers a good landmark and orientation point. Also the Sport Centre with its curved roof is a landmark. The Women’s Resource Centre on Daku Road is a two story baby pink building and much more a landmark than the Shopping Centre next to it. The power line that runs on the north side of Daku Road can be used as a kind of a landmark.

The many floodlights are so scattered that they cannot be of any help as landmarks. The terrain is too flat for one to have a mountain or other landscape objects as a help for orientation. There are a lot of churches in the area and some of them can be seen from a distance, but at the same time there are so many that they might be hard to tell apart.
Conclusions from City Structure Analysis

Kwazakhele offers some spots with lively street life while other parts feel neglected. The street structure does not prioritize the pedestrians and the paths found in the area are often below physically acceptable standard. New paths are needed to create an overall pedestrian network. The new paths should increase accessibility to major attractions and nodes. Adding small scale street light would increase the number of paths usable for pedestrians during the dark hours.

Njoli Street and Daku Road, the two main paths in the area, have housing mixed with all sorts of businesses and appear disorganized. A more common design language and layout of streets will strengthen the overall appearance and increase accessibility.

Due to the flat area bicycle lanes could be an easy and effective mean of transportation within Kwazakhele. The bicycle lanes should connect the housing areas with schools and main attractions in the area.

The street trade has some obvious spots, but apart from Njoli Square, they feel unplanned and the hawkers need more organized spaces to operate in. A new market meeting basic sanitary needs is necessary. Adding facilities and functions at the existing nodes would create stronger nodes. Through design and layout this could create the well-maintained public spaces lacking in Kwazakhele.

It is difficult to orientate oneself in the area, which is flat and often featureless. Apart from the two sub-districts, most of the houses look the same. A larger selection of housing types would be beneficial for the area so that different groups of people can find housing suitable for them. This could also strengthen the identity for the already existing areas, making them discernable districts.

There is a lack of landmarks or special features in the area. The only landmark is the power plant which is visible from many places within the project area. New landmarks would make it easier to orientate oneself in the area. New landmarks could help strengthen the identity of the area.
**SWOT-analysis**

This chapter aims to clarify the strengths, weaknesses, opportunities and threats which are present in the Kwazakhele area today. The result of this analysis will be used to identify guidelines for our proposal. The SWOT-analysis is based on our own inventory, Kevin Lynch’s City Structure Analysis and from informal discussions we had with residents in the Kwazakhele area.

**Strengths**

- **Nodes**
  There are four easily identifiable nodes in the area. Njoli Square is the liveliest, followed by Daku Road Shopping Centre and the intersection Njoli Street/Mavuso Road and the intersection of Salamantu Street/Daku Road.

- **Busy street life**
  Along Njoli Street there is busy street life with lots of people, cars and minibus taxis on the street. Many shops, mostly informal, are located with direct access from the street. Daku Road from Njoli Square up the intersection with Seyisi Street is even busier. There are more shops located on Daku Road with a concentration around the Shopping Centre.

- **Potential usage of public transport**
  A large proportion of travelling within Kwazakhele area is done by foot or by minibus taxi, this provides a good base for public transport.

- **Feeling of belonging**
  The residents in Kwazakhele take pride in their houses and traditions, which creates a strong sense of community.

**Weaknesses**

- **Lack of places developed for public use**
  Most of the places set aside for public use are badly maintained, have turned into informal housing areas or function more or less as refuse dumps. Large undeveloped sites usually set aside for community purposes and large school sites become unpleasant places during dark hours.

- **Lack of shaded places with street furniture**

- **Difficult for vegetation to grow strong**
  Poor nutrition in the soil, vandalism and lack of maintenance makes it difficult for trees to grow.

- **Lack of public facilities**
  There are few public facilities within the Kwazakhele area. There is no bank, post office or library. There is only one police station. There is only one set of public toilet (within the Daku Road Shopping Centre) and a limited variety of shops are offered.

- **Lack of transition between private and public space**
  There are few semi-private and semi-public places in the area. They are in general poorly maintained.

- **Street design promotes car traffic**
  There is a lack of proper pedestrian lanes in the area and the vehicles do not take any consideration of the pedestrians.

- **Monotonous environment and lack of landmarks**
  The Kwazakhele area consist of detached one family houses which makes it difficult to orientate oneself in the area, most streets look alike. There is one exception; the hostel area consists of blocks of row houses which gives the area a different character. There are few buildings of specific architectural interest and there is a lack of landmarks.

- **Lack of housing alternatives**
  Only two housing types are offered within the project area, the detached houses and the row houses in the Matthew Goniwe hostel area. There are no apartments for young people or people who do not want to or cannot take care of a house.
Opportunities

- Possibility to densify
Large undeveloped sites make it possible to increase the density within the area. Densification of the area could provide a streetscape with more clearly defined streets and places. Densification can also provide the possibility to add character as well as provide alternative housing types. Through densification it is possible to intensify street life and life in public spaces. There are many small areas set aside for public use; these can be used for densification purposes as well as they create good opportunities to develop public spaces.

- Bicycling
Flat landscape provides good bicycling opportunities.

- The Khulani Corridor
The corridor will provide better public transport for less money and thereby improve access to work opportunities and services. It could provide a better base for local businesses and thereby increase the economic activity within the area.

- Possibility to improve character
To add street furniture, trees and lighting would make it possible to improve the street design as well as create pleasant public places with small means.

Threats

- HIV/AIDS
The disease is changing the demography of the population and the traditional family structure has changed as a result of this. This creates great social and economic needs and may hamper economic development.

- No high income earners
When people start earning money they tend to leave the area.

- Crime and fear of crime
The high crime rate within the area as well as peoples’ fear of crime can prevent the use of public places. This creates an unpleasant and poor environment. The fewer people there are to be found on the streets, the more will perceive them as dangerous and unattractive and therefore stay away from them.

- Poor reputation
The poor reputation makes businesses hesitant to invest in the area and due to this there are few formal job opportunities within the area.\(^{20}\)

- Shoppingmalls
The expansion and building of massive shopping malls takes business away from hawkers. They also create a threat towards street life and they are not possible to access for everyone.

- Resentment towards densification
People prefer to live in a detached house with their own plot. There have been difficulties to communicate the benefits of densification, such as improved services and supply of public transport.

\(^{20}\) Interview with Amelia Büchner, Assistant Manager, Economic Development Department, NMNM, 27th of November 2006.
Based on the changes the Khulani Corridor will bring as well as planning strategies for the NMMM and our inventory and analysis of KwaZakhele, we have chosen five conceptual ideas which are central in our proposal; mixed use development, high density and densification, public space, housing alternatives and safety and security. We find these five ideas extra important working with the project area.

The NMMM is arguing for mixed use development and densification, these concepts are today vital guidelines for the city. Extensive housing delivery is a national strive and of vital importance for Port Elizabeth and the NMMM as a whole due to the huge housing shortage. The development of public space as well as parks and recreational space has sprung from our inventory and analysis of KwaZakhele. The need for public spaces and recreational areas are also mentioned in several publications by the NMMM. Here follows a theoretical background and brief discussion of our concepts.

**Mixed Use Development**

A mixed use development promotes sustainability through more efficient use of resources and infrastructure as well as the reduction of transport and travel needs, increases the accessibility to services and it provides a more dynamic and lively environment which can meet the needs and interest of several different groups in society. A mixed use development also provides greater variation in the urban structure (NMMM, 2007, p. 24).

We think that the neighborhood should allow for people with different economic situations and in different stages in life to grow and develop within the area. A mixed use development can allow for this to happen by supplying different work opportunities and a range of housing alternatives with different tenures.

Today a common goal when redesigning or building a neighborhood or a city is to create an attractive and sustainable environment. One aspect of the attractiveness is to provide options for interaction and intimacy between the inhabitants as well as a mix of housing, businesses, recreational areas, education, culture, leisure activities and other functions. This is especially important when living, working and spending ones free time within the same area (Boverket, 2002, p. 49). Many inhabitants in KwaZakhele spend most their time in the area, not by mere choice, but because of unemployment and lack of money. This makes access to service facilities and recreational areas even more important.

According to the Sustainable Communities Planning Guide (NMMM, 2007) a mixed use development will result in a higher density and can be located along activity corridors, public transport corridors and adjacent to central services nodes and commercial centers. Like in the case with the Khulani Corridor. Examples of mixed use development is combined residential and business units, e.g. ground floor shop with upstairs accommodation, small business activities, market places and shops in residential areas, use of schools as cultural centers for community meetings, co-location and resource sharing among community services and urban agriculture in backyards as well as in larger common areas.

**High density and densification**

There are a lot of arguments why a city or neighborhood should be densified, as the opposite to allowing urban sprawl. A dense city is perceived by many as more dynamic (Boverket, 2002, p. 216). Densification carters for improved accessibility to work, services and public transport and can support integration. It allows for shorter, timesaving, travels in everyday life.

High density can be achieved by reducing the plot size, supplying different housing alternatives, allowing mixed land use, infilling and redesign. As concluded in the inventory, KwaZakhele has a lot of undeveloped areas, such as road reserves, large school yards and areas inhabited by squatters which could be redeveloped.

A high density development should not be reserved for just the most central parts of a city, but streets and esplanades, care for lighting and design in general should also be found in less central parts of the city to promote their character and identity. High density gives the possibility to supply better services and businesses. It can also give people better chances to meet and interact. And it is by interaction fear is broken down and trust is built up. When building with higher density it is possible to create a streetscape, and the street is our most important place for city life and meetings. Higher density provides a better basis for a street life. (Boverket, 2002, p. 319).

The Sustainable Communities Planning Guide (NMMM, 2007) states that higher densities should especially be encouraged at central nodes and along transport corridors and argues that in most places in the NMMM the density can be doubled without reducing access to open space. The Sustainable Communities Planning Guide further states that the preferred density is 70-100 housing units/ha in areas with multistory houses and 50-60 units/ha for semi-detached housing areas.

When building new areas the Sustainable Communities Planning Guide (NMMM, 2007) states that housing clusters of 30-50 units should be the primary structural unit offering different kinds of apartments with a common open space. There should be a smooth transfer between private to public space. The arguments for building a high density neighborhood can be economically beneficial since the cost of development can be lower. Public transportation can also be cheaper and run more frequent, as the intentions with the Khulani Corridor.
Housing alternatives

As said in the inventory and analysis, Kwazakhele lacks different housing options. It is important to create housing alternatives with different tenure options.

To cater for the lack of housing alternatives, we have chosen two new house types to increase density. We consider them to be in line with the already existing development. We have listened to the wishes of the people living in the area and their wish to have access to a plot or yard of your own.

High density Walk-ups
In 2004 an international architecture competition on affordable high density housing was held in Eastern Cape. We have used the house from the first prize winner, Julian Cooke Architect.

<table>
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<th>Fig. 60 Elevation of walk-ups</th>
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The house consists of three floors; first floor is mixed business and residential and the second and third is only residential. Different flat sizes and tenure options are possible within the house type. The apartment size varies from 25 to 55 m². The apartments seen here on ground floor are approximately 30 to 50 m².

On the first floor a combined space for a home based economic business and flat is created. This encourages local economic development. To narrow the gap between the informal business sector and the formal business sector we think that offering a small, formal space designed for this purpose within you home is a good solution. The home based businesses offers an economically more affordable choice for the inhabitants than the formal business sites.

Medium density semi-detached housing
South African Housing Project of the Year 2006 with a construction value under R80 000 was won by the Walmer Housing Development Trust and Lance DelMonte at Metroplan for their Sakhasonke Village development in Port Elizabeth.

The houses are double storey, semi-detached units. The units are grouped into duplexes and some triplexes. The average floor area is about 45m². The units each have space for a kitchen, a lounge, a bathroom with a toilet downstairs, and two bedrooms upstairs.

<table>
<thead>
<tr>
<th>Fig. 62 Semi-detached houses in Walmer, Port Elizabeth</th>
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<th>Fig. 63 Row-houses in Walmer, Port Elizabeth</th>
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Public space

For the development of public space we are inspired by the Danish Architect Jan Gehl. In his book Life between Buildings – Using public space Gehl discusses how outdoor public spaces are used and how their design effect the activity which occur within the space.

Gehl divides the outdoor activities into three categories (Gehl, J. 1996, pp. 11-14):

1. Necessary activities which are not affected by the place they occur within, for example going to school, waiting for a bus or running errands.

2. Optional activities are affected by the surrounding and these activities take place only when the exterior conditions are optimal, such as taking a walk, sitting and sunbathing and watching street life.

3. Social activities occur spontaneously and are dependent on the presence of other people in public spaces. This implies that social activities are indirectly supported whenever necessary and optimal activities are given good conditions. The character of the social activities differs depending on the kind of public space they occur in, for example in the residential street where people in a larger extent “know” each other or in the city streets where people are strangers to one another.

Gehl divides the level of contact into five categories which refers to the intensity of the contact forms:

<table>
<thead>
<tr>
<th>High Intensity</th>
<th>Close Friendships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends</td>
<td>Acquaintances</td>
</tr>
<tr>
<td>Chance Contacts</td>
<td>Passive Contacts (”see and hear” contacts)</td>
</tr>
</tbody>
</table>

| Low Intensity |

Life between Buildings discusses primarily the low-intensity contact of the scale above and offers an opportunity to interact with others in an undemanding way (Gehl, J. 1996, pp. 17-19). The physical structure of an area can support and help create the desired social structure by letting the inhabitants interact in an undemanding way. Gehl argues that the flowing and gentle transition between the various categories from private to public zones is very important for how the social structure can be established. The making of such a transition which gently allows people to move from private to gradually more public spaces gives a greater feeling of security and a stronger sense of belonging to the areas outside the private residence (Gehl, J. 1996, p. 61).

The division between private and public can be divided into a hierarchical order but can also be more diverse than the scheme shown below.

Fig. 65 From private to public

The establishment of such a graduation between private and public spaces within a residential area results in a higher degree of natural surveillance, a sense of collective responsibility for the public spaces and improves the possibilities for making group decisions concerning shared matters.

In our analysis we concluded that there is a lack of semi-private and semi-public spaces in Kwazakhele. There is also a lack of well maintained public spaces and a market place meeting sanitary needs. The market should be located so that it is a natural meeting point, giving the hawkers a better basis for their trading.
Safety and security

The issues of safety and security are important to have in mind when planning the area. It is important to reduce the actual crime rate as well as the risk and the fear of crime. Careful planning can contribute to this.

One way to create a safe environment is to increase the level of social control through different arrangements. Social control is created when people can see other people and also are seen. A design and layout of street and buildings which is easy to grasp and with no dark corners and limited vegetation at possible hiding spots enhance the feeling of safety (Boverket, 2002, page 319).

By placing buildings close to the street a good contact between outdoor and indoor environment is created. The buildings should have windows on the bottom floor to enhance this connection. Walls and fences interfere with social control and reduce the natural surveillance, they should therefore be kept low.

To easily comprehend and read one’s surrounding helps to increase safety and security. By creating a street pattern which is easy to read and by the creation of landmarks it will be easier to orientate oneself in the area. The street pattern should be coherent, clear and legible. Kevin Lynch argues that in order to create a street pattern which is easy to read he would “give each path an identifiable character and make the network memorable as a system of clear and coherent sequences.” […] “Each road could be given a coherent form, and the intersections with other paths made clear.” (Marshall, S. 2005, p. 29).

An active street life is essential when creating a secure environment. Mixed use development with offices, residential, recreational and commercial use can help to keep the streets populated, and therefore safer, during all hours of the day. When more people are using the streets, the informal surveillance is increased. Placing different attractions along important pedestrian and bicycle lanes will increase the activity. Pedestrian friendly areas are more likely to have an active street life. To be able to choose between alternative paths is important in situations perceived as unsafe or insecure. (Boverket, 2002, p. 319)

Activities that attract people should be located next to parks and other public places. They should be well lit with no dark corners. Main entrances of residential dwellings facing parks and other public spaces will also enhance the level of security. It is important to create good opportunities for people to make use of parks and other public places by providing seating arrangements and lighting.

Lighting should be evenly distributed to avoid dark areas. Lighting should be provided for pedestrians, bicyclist and vehicle traffic. It can also be used to indicate landmarks and significant buildings to increase the possibly to orientate oneself in the area during dark hours.

Pedestrians and bicyclists should be able to travel safe on their own separate lanes. Conflicts with vehicle traffic will then mainly occur at crossings. Safety arrangement such as raised level crossings and speed bumps will reduce the risk of accidents. A lower speed limit will also reduce the risk of accidents. The street can be designed for lower speed by tree planting, narrow lanes and by building roundabouts (Boverket, 2002, p. 316).