

**Pedestrian and cycle routes should be prioritised and accessible to all**



### 3.4 Transport

The transport system includes different modes of transport for public and private travel and for the transport of goods. The different modes of transport need to be viewed from a holistic perspective, as they should complement each other and be linked in an overall structure. Transport in a sustainable community unit needs to be an integrated system, as spatial structure is largely defined by transport routes. Transport systems enable access to:

- residential areas
- employment zones and job opportunities
- commercial, social and municipal services
- services, also for disabled and other people with special needs
- recreation, entertainment and cultural activities

The way transport is provided is important for achieving integration and sustainability, and influences corridor planning, higher densities and mixed development. Modes to be emphasised in spatial planning for sustainable communities are pedestrian, bicycle and public transport. Motorised transport is a major contributor to air and noise pollution. Too many private vehicles cause traffic congestion, and are not an economic option for commuting. Sustainable cities need to reduce private vehicle use and enable people to commute by providing good public transport and to increase local access to services and employment opportunities.

#### Walking and cycling

The structure of a sustainable community is based on walking, with a convenient distance to services as the main design criteria. (max. 2 km or 30 minutes). Pedestrian and cycle routes should prioritise safety, security, convenience and direct access, with walking and cycle paths separated from roads on main and feeder routes. Streets in neighbourhoods should prioritise pedestrians and cyclists, and require cars and public transport to reduce speed. Road planning should encourage walking and cycling by designing for lower speeds, safer routes and more attractive walking and cycling environments.

A network of pedestrian walkways is an essential structural component, connecting housing clusters, primary schools, neighbourhood centres, employment areas, community service centres, transport nodes and recreation environments. Walkways should be designed for the needs and safety of children, the disabled and cyclists.

#### Public transport

Public transport in communities at present is mainly via taxis and buses. Mass commuting to city centres and employment areas is preferable via high capacity buses operating on major roads with special bus-lanes.

Major bus routes should be supported by feeder buses or taxis into neighbourhoods, provided speeds are kept low and there are regular, identified bus-stops. Activity corridors are suitable for feeder buses. Links between feeder and high capacity transfer buses should be at central transport nodes, local employment areas or market places. Commuter rail transport is an option for high volume routes. Both rail corridors and road based transport work best with high density development centred around the stations or stops.



**The road network and car transport**

The road network should promote easy access, facilitate movement within community units, provide guidance through a clear and understandable road structure and promote safety and security for travellers and pedestrians.

The road network should facilitate easy access to different parts of the city via high capacity transport routes or highways connecting different parts of the city, with:

- special transport route corridors for fast buses, taxis and trains
- a limited number of interchanges and access points on highways
- no pedestrians or cyclists on highways

Within communities the road network should be designed in such a way that traffic is minimised and alternative routes are made available. The number of alternative access/exit points should be maximised in order to reduce traffic movements and to distribute the traffic flow.

Roads in residential areas should prioritise the movement and safety of pedestrians and cyclists, and be designed to:

- subordinate traffic to pedestrians
- minimise traffic and traffic speeds
- provide paths for walking and cycling on the most direct routes
- avoid straight roads over long distances
- provide alternative routes and access/exit points to distribute traffic flow
- provide roadside parking
- use different surfacing materials to distinguish road use and character

Categorisation of roads in a hierarchical structure concentrates traffic on certain routes and junctions, increasing traffic flows, while providing alternative routes enables shorter travelling distances.



**A restricted road network with a limited number of access/exit points concentrates traffic at a few junctions, increases traffic flows, intensity and travelling distances.**



**An open road network with a greater number of access/exit points provides alternative travel routes and reduces travelling distances. The layout and design of roads will determine the speed and can be used to prioritise pedestrians. An open system is suitable in situations with limited traffic.**



**Taxi rank and bus station in the CBD**



**GLOSSARY**

**CBD**

Central business district of a city or town

**feeder routes**

local roads leading to main transport routes

**feeder buses**

local buses taking people to main bus routes or stations

### Sustainable transport in South African cities

Roads are important and expensive infrastructure in any development, so it makes sense to optimise the number of people using them. The most efficient, environmentally responsible and equitable way to do this is to prioritise travelling not in private vehicles but via public transport, as the key to a sustainable transport system. Walking and cycling also take up very little space, are non-polluting, and in addition are a healthy way to travel.

It is a good idea to plan for people to live close to where they work, shop or access services, so that they don't spend a lot of time or money on travelling. Where this isn't possible it is a good idea to plan for people to live or work close to a public transport route. These routes should pass through the centres of neighbourhoods and directly connect activity centres.

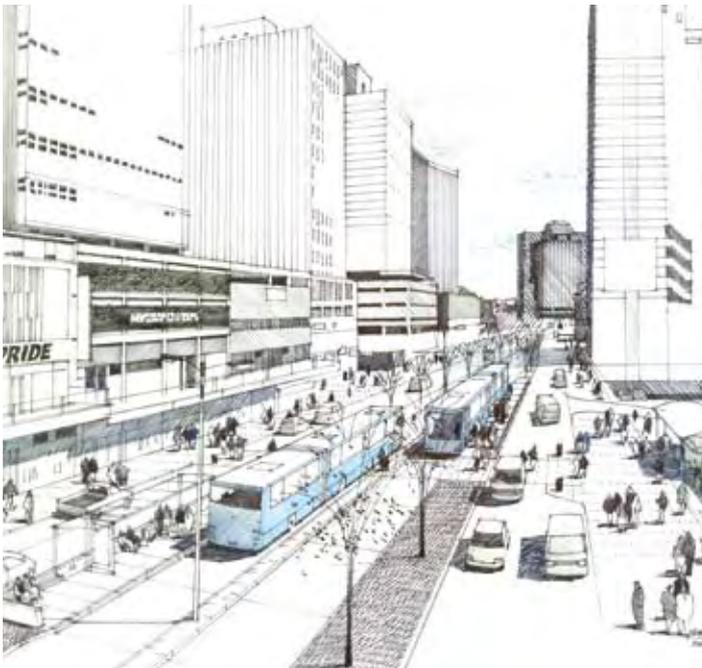
As a guide, the maximum walking distance from any house to a bus stop should be 400 m.

»High-density housing developments should be situated closer to the roads along which buses operate. Development to a depth of at least 200 m on both sides of bus routes is desirable.«

*Guidelines for Human Settlement Planning and Design, Chapter 5.2, p.19*

»An efficient, safe, affordable, sustainable and accessible multi-modal transport system which is integrated with land-use development to ensure optimal mobility for the residents and users of the transport system in the metropolitan area.«

*NMBM Integrated Transport Plan  
Vision, 2005*



**An artist's impression of what a modern integrated transport system along Khulani corridor could look like**  
*Public Transport Plan, summary presentation, May 2006*



**A transport corridor in Curitiba, Brasil, supported by high density residential development and mixed use**



**Designing movement networks for safety**

*Some questions*

- How do most people travel in this area?
- Who is at a high risk when they travel (e.g. school children crossing big roads, walking home in the dark, a dangerous bend in the road for cars etc)?
- What can we do to make it safer?

*Tips*

- A Road Safety Audit is an excellent way of identifying potential problems on a new or existing route.
- Plan distinct walkways and cycle paths, separated from vehicular traffic where possible.

Reduce the speed of vehicles on residential roads. Think of ways to do this other than speed humps. Speed humps are effective and relatively inexpensive, but they can cause vehicles to speed up significantly between humps and they enhance noise and fuel inefficiency. Long straight wide roads encourage speeding, so try to avoid these in neighbourhood layouts. Other methods include:

- Chicanes
- Raised intersections
- Different materials at intersections
- Visual uncertainty through hedges alongside roads, no signs or markings
- Table-top crossings
- Mini-circles

Accidents that result in pedestrian deaths or injuries decrease as motor vehicle speeds decrease. But public and user education and enforcement need to complement good design to ensure safe movement in an area.

Many school children walk to school and are vulnerable when crossing roads, especially when they are very small. A good idea is for the schools or parents in the neighbourhood to organise a walking school bus.

For more information refer to [www.ccc.govt.nz/saferoutes/wsb/WalkingSchoolBusBrochure.pdf](http://www.ccc.govt.nz/saferoutes/wsb/WalkingSchoolBusBrochure.pdf)



*Road safety training*

**GLOSSARY**

**optimise**  
make as much as possible

**multi-modal**  
with many different types or methods

**chicane**  
narrowed section of a street

**table-top crossings**  
crossings raised above road level

**walking bus**  
a group of children who walk together to or from school as a unit, guided by a few adults



### Area layout design – roads and traffic

Neighbourhood area layouts are based on a movement network of linked roads and paths that enable people to move through the area in different ways. Walking and cycling can occur on a non-motorised network, whereas cars, buses, taxis and trucks need a road system. These two movement networks can be separate and can coincide.

To promote safety and equitable distribution of space amongst travellers of various modes, the best solution is an 'open' network for walking and cycling, with a more 'closed' network to discourage vehicular through traffic. The design of the internal vehicular routes is important to avoid future costs of installing traffic calming. Ideas for slow, safe internal routes include the 'woonerf', 'naked streets' and 'cluster layouts'. Faster vehicle routes should run along the boundaries of neighbourhoods, with public transport stops serving the neighbourhood, and accessed via walkways.

### New thinking – From road layouts to movement networks

Traditional planning guidelines referred to 'road layouts', but these are now described as 'movement networks', defined as public right-of-way networks, accommodating any mode of travel. This term signifies a different approach in the design of networks for movement in that:

- Public right-of-way networks, as opposed to road layouts, are the focus of planning and design.
- Reference to conventional road classifications such as 'access roads' or 'distributors' is avoided to prevent preconceptions regarding the functions and cross-sections of roads.
- Continuous, pedestrian-friendly, public right-of-way networks are promoted over conventional, discontinuous suburban road layouts.

*Guidelines for Human Settlement Planning and Design, Chapter 5. Compiled by the CSIR under the the patronage of the National Department of Housing*

**Transport by bike is convenient and environmentally friendly**



#### GLOSSARY

##### **naked streets**

streets without traffic signals, signs, sidewalks, markers, speed bumps, or even curbs. This makes motorists drive more slowly and be more cautious, thus reducing accidents

##### **woonerf**

a street or area where pedestrians and cyclists have priority over motorised traffic. These shared streets are designed to limit traffic speeds

##### **cluster layouts**

cluster housing where vehicle access and/or speeds are limited



**TRANSPORT checklist**

How do planning principles apply to transport?



Principles	Applications	Results
<b>Poverty alleviation – meeting basic needs</b>	<ul style="list-style-type: none"> <li>• Accessibility to job opportunities and services</li> <li>• Efficient public transport</li> <li>• Subsidised public transport</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced travelling cost, more choice and opportunities</li> </ul>
<b>Focus on special needs groups – HIV/AIDS affected persons, children, the aged and people with disabilities</b>	<ul style="list-style-type: none"> <li>• Wheel chair friendly (universally access)</li> </ul>	<ul style="list-style-type: none"> <li>• Increased accessibility and mobility</li> </ul>
<b>Gender equality</b>	<ul style="list-style-type: none"> <li>• Provide safe pedestrian access</li> <li>• Safe public transport</li> <li>• Safe and convenient access</li> </ul>	<ul style="list-style-type: none"> <li>• Improved transport = improved accessibility</li> </ul>
<b>The environment – physical, social, economic</b>	<ul style="list-style-type: none"> <li>• Mode of transport must be environmental friendly/sustainable</li> <li>• Promote public transport, walking and cycling</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced pollution, and costs</li> <li>• Walking and cycling improve health</li> </ul>
<b>Participation and democratic processes</b>	<ul style="list-style-type: none"> <li>• Consultation on input and design</li> </ul>	<ul style="list-style-type: none"> <li>• Meeting needs and priorities</li> <li>• A sense of responsibility</li> </ul>
<b>Local economic development</b>	<ul style="list-style-type: none"> <li>• Applications of transport</li> <li>• Local economic development initiatives in transport</li> </ul>	<ul style="list-style-type: none"> <li>• Access to markets</li> <li>• Location to facilitate accessibility</li> </ul>
<b>Accessibility – public transport and pedestrians</b>	<ul style="list-style-type: none"> <li>• Plan movement networks for ease of access</li> </ul>	<ul style="list-style-type: none"> <li>• Things are more accessible for everyone</li> </ul>
<b>Mixed use development</b>	<ul style="list-style-type: none"> <li>• Appropriate mobility network around and in mixed-use areas</li> <li>• Co-ordination of land use and transport planning</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced amount of travelling</li> </ul>
<b>Corridor development</b>	<ul style="list-style-type: none"> <li>• Increase densities</li> <li>• Trunk buses along corridors</li> </ul>	<ul style="list-style-type: none"> <li>• More efficient public transport</li> </ul>
<b>Safety and security</b>	<ul style="list-style-type: none"> <li>• Prioritise pedestrian movement</li> <li>• Areas designed for surveillance</li> <li>• Safety of vehicles, speed bumps, traffic calming zones, pedestrian crossings</li> <li>• Increase law enforcement</li> <li>• Feeling of security</li> </ul>	<ul style="list-style-type: none"> <li>• Safety and safe public transport</li> </ul>
<b>Variation and flexibility</b>	<ul style="list-style-type: none"> <li>• Provide for different modes of transport</li> <li>• Integration of different modes of transport</li> </ul>	<ul style="list-style-type: none"> <li>• More efficient transport</li> <li>• Linkages between different modes of transport</li> </ul>
<b>Densification</b>	<ul style="list-style-type: none"> <li>• Multi-story development along corridors</li> <li>• Mixed use and zoning flexibility</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced travelling</li> <li>• More efficient public transport</li> </ul>
<b>Reducing urban sprawl</b>	<ul style="list-style-type: none"> <li>• Increase density</li> <li>• Public transport routes linking higher density areas, nodes, centres and employment zones</li> </ul>	<ul style="list-style-type: none"> <li>• More efficient public transport</li> <li>• Cost efficient transport</li> </ul>



**Community spirit and sense of togetherness is a feature of sustainable communities.**



**Community organisation and co-operation in local informal and organised structures enable people to raise issues and problems, and seek solutions together**

**GLOSSARY**  
**CBO**

community based organisation

**allocation processes and criteria**

the process whereby services, sites and houses are provided and the factors considered in deciding who will receive them

**community fabric**

that which characterises and binds a community together

### 3.5 Community

Community as a concept refers to how people live together, interact and co-operate. Community development, positive social and cultural interaction and local organisation are essential in a sustainable community, and are supported by:

- good urban design with neighbourhood housing clusters
- definition of areas and provision of public spaces and meeting places
- participative planning processes with representative structures
- identifying and prioritising needs and issues
- ongoing responsibility and community participation in improving and caring for the environment.
- early agreement regarding participation, communication, identification of beneficiaries and allocation processes and criteria
- self and mutual-help activities
- involvement in implementation
- municipal community partnerships

#### Community – integration and sustainability

Community spirit and a sense of togetherness is a feature of sustainable communities and a basis for their continued development. A sense of safety, belonging, harmony, mutual involvement and the ability to meet one's needs and to influence the environment, combine to create a positive, high quality community life. People feel they belong in the area, and wish to remain and contribute to its development over time.

Safety and security are essential for social and economic sustainability, and should be based on community co-operation and care, as well as law enforcement. High levels of crime deter investment, development and continued residence by those who can afford to move out of an area.

Well designed, attractive buildings in a safe, pleasant environment, with vegetation and beautiful open spaces create a sense of community well-being and pride. Accessible local public spaces and buildings contribute to social interaction and co-operation.

Community organisation and co-operation in local informal and organised structures enable people to raise issues and problems, and seek solutions together. Local interest groups, CBOs and specific projects and initiatives further strengthen the community fabric and social sustainability. A mixed use environment creates additional interest groups such as the business sector, with an interest in the quality, development and economic sustainability of the area.



## COMMUNITY checklist

How do planning principles apply to community?



Principles	Applications	Results
<b>Poverty alleviation – meeting basic needs</b>	<ul style="list-style-type: none"> <li>•Combine meeting places with LED</li> <li>•Multi-purpose spaces and centres</li> </ul>	<ul style="list-style-type: none"> <li>•Knowledge/skills transfer/sense of belonging</li> </ul>
<b>Focus on special needs groups – HIV/AIDS affected persons, children, the aged and people with disabilities</b>	<ul style="list-style-type: none"> <li>•Community support centres</li> <li>•Easily accessible parks</li> <li>•Multi-purpose centres</li> </ul>	<ul style="list-style-type: none"> <li>•Integration and acceptance in the community</li> </ul>
<b>Gender equality</b>	<ul style="list-style-type: none"> <li>•Accessibility to facilities, e.g. clinics</li> <li>•Formal/informal meeting places</li> </ul>	<ul style="list-style-type: none"> <li>•Empowerment of women</li> </ul>
<b>The environment – physical, social, economic</b>	<ul style="list-style-type: none"> <li>•Community participates in maintaining the public environment</li> </ul>	<ul style="list-style-type: none"> <li>•Cost effective use of resources</li> <li>•Beautiful and cared for environment</li> <li>•Ownership</li> </ul>
<b>Participation and democratic processes</b>	<ul style="list-style-type: none"> <li>•Opportunities for meeting places,</li> <li>•Promote public participation and consultation</li> </ul>	<ul style="list-style-type: none"> <li>•Improved implementation of projects</li> <li>•Sustained community responsibility</li> </ul>
<b>Local economic development</b>	<ul style="list-style-type: none"> <li>•Home-based activities</li> <li>•Opportunities for local markets/entrepreneurs</li> <li>•Production and trading opportunities</li> </ul>	<ul style="list-style-type: none"> <li>•Economic upliftment</li> <li>•Safer working environment</li> </ul>
<b>Accessibility – public transport and pedestrians</b>	<ul style="list-style-type: none"> <li>•Safe and pleasant pedestrian walkways, cycle paths, bus stops etc.</li> <li>•Paving and lighting</li> </ul>	<ul style="list-style-type: none"> <li>•Improved pedestrian safety</li> <li>•Increased mobility</li> </ul>
<b>Mixed-use development</b>	<ul style="list-style-type: none"> <li>•Building design and access to accommodate mixed-use development</li> <li>•Providing options</li> </ul>	<ul style="list-style-type: none"> <li>•Accessibility</li> <li>•Transport cost saving</li> </ul>
<b>Corridor development</b>	<ul style="list-style-type: none"> <li>•Better accessibility</li> <li>•Improved mixed-use development</li> <li>•Location for community development/multi-purpose centres</li> </ul>	<ul style="list-style-type: none"> <li>•Improved public transport</li> <li>•Safer public environment</li> </ul>
<b>Safety and security</b>	<ul style="list-style-type: none"> <li>•Layout facilitating surveillance</li> <li>•Natural surveillance – use natural topography, landmarks, etc to create more character</li> </ul>	<ul style="list-style-type: none"> <li>•Improved safety and security</li> <li>•Fewer fences</li> </ul>
<b>Variation and flexibility</b>	<ul style="list-style-type: none"> <li>•Community participation in planning</li> </ul>	<ul style="list-style-type: none"> <li>•Different needs of the community are met</li> <li>•Increased awareness</li> </ul>
<b>Densification</b>	<ul style="list-style-type: none"> <li>•Provide for different needs and groups</li> <li>•Corridor development</li> </ul>	<ul style="list-style-type: none"> <li>•Greater interaction</li> <li>•More compact social structures</li> </ul>
<b>Reducing urban sprawl</b>	<ul style="list-style-type: none"> <li>•Centralise services and provide better and bigger range</li> </ul>	<ul style="list-style-type: none"> <li>•Enhanced economic base and social interaction</li> </ul>



**Landmarks – the blue mural house and the round house on the red square**

#### GLOSSARY

##### **mural**

painting on a wall

##### **character**

unique qualities

##### **legibility**

expression of identity and character in physical environment

##### **townscape**

urban environment as opposed to landscape

##### **streetscape**

the design and appearance of a street

##### **landscaping**

shaping and design of a garden or open space

##### **set-backs**

positioning of houses in relation to the street

##### **precinct**

area within the boundaries of a building or complex of buildings

##### **plaque**

metal name or information plate in a public place

##### **greenfields development**

new development on previously unused land

## 3.6 Character and Identity

The character and identity of a community area depends on the culture and lifestyle of inhabitants, and the quality of the built and natural environment, which is important to most people, and contributes to social identity and sustainability. Positive and responsible attitudes are fostered by a functional and well designed townscape and pleasant surroundings. Tolerance and valuing diversity are important for social and economic integration.

Creating harmonious townscapes is a difficult art, requiring integration of layouts, streetscapes, building design, landscaping and natural features. Architecture and urban design should confer character and identity, which can be enhanced by public buildings, parks and open spaces.

### Local environment

Housing clusters along lanes or around common spaces create the actual living environment, conditions and ambience of an area. Local environments need to be carefully designed at the more detailed planning level, but need to be anticipated and enabled by appropriate area layouts. With stand-alone housing, detailed design is often considered a private issue, but guidelines regarding house design, roof-types and set-backs can promote harmony, diversity and variety.

Existing urban style and character, where positive, should be preserved, perpetuated or complemented. Important aspects of history and culture can be commemorated in precincts with landmarks such as monuments, statues, fountains, murals, plaques and specially planted commemorative trees and gardens as remembrance features.

In designing sustainable communities, character and aesthetics are important to the quality of life and social well-being, and need to be consciously planned and integrated with other essential design criteria. Features need not be complex or expensive – good layouts, housing design and integrating nature into built environments can create quality environments, even for poor communities. Greening of new developments over time is important, and an opportunity for local environmental initiatives. The use of indigenous water-saving plants and trees should be encouraged.

Phased construction of housing and slower expansion can contribute to more harmonious settlements, as opposed to the rapid, standardised, industrial mass-production approach. A slower, more organic approach enables greater community participation in design and implementation, greater variety in design, construction options and features, and therefore greater local and community determined character.

### Local activities

The range and diversity of local social, economic and cultural activities enhance the culture and character of an area, and help to attract and retain a diversity of residents. Areas with a rich local character also attract tourists and visitors, who contribute to the local economy and create new local economic opportunities. Local customs and practices, arts and crafts, events and development projects not only enrich the lives of residents but make areas attractive to outsiders. However, areas need to be safe, and ensuring safety and security can provide local income generating opportunities.



**The Red Location Museum of Struggle**

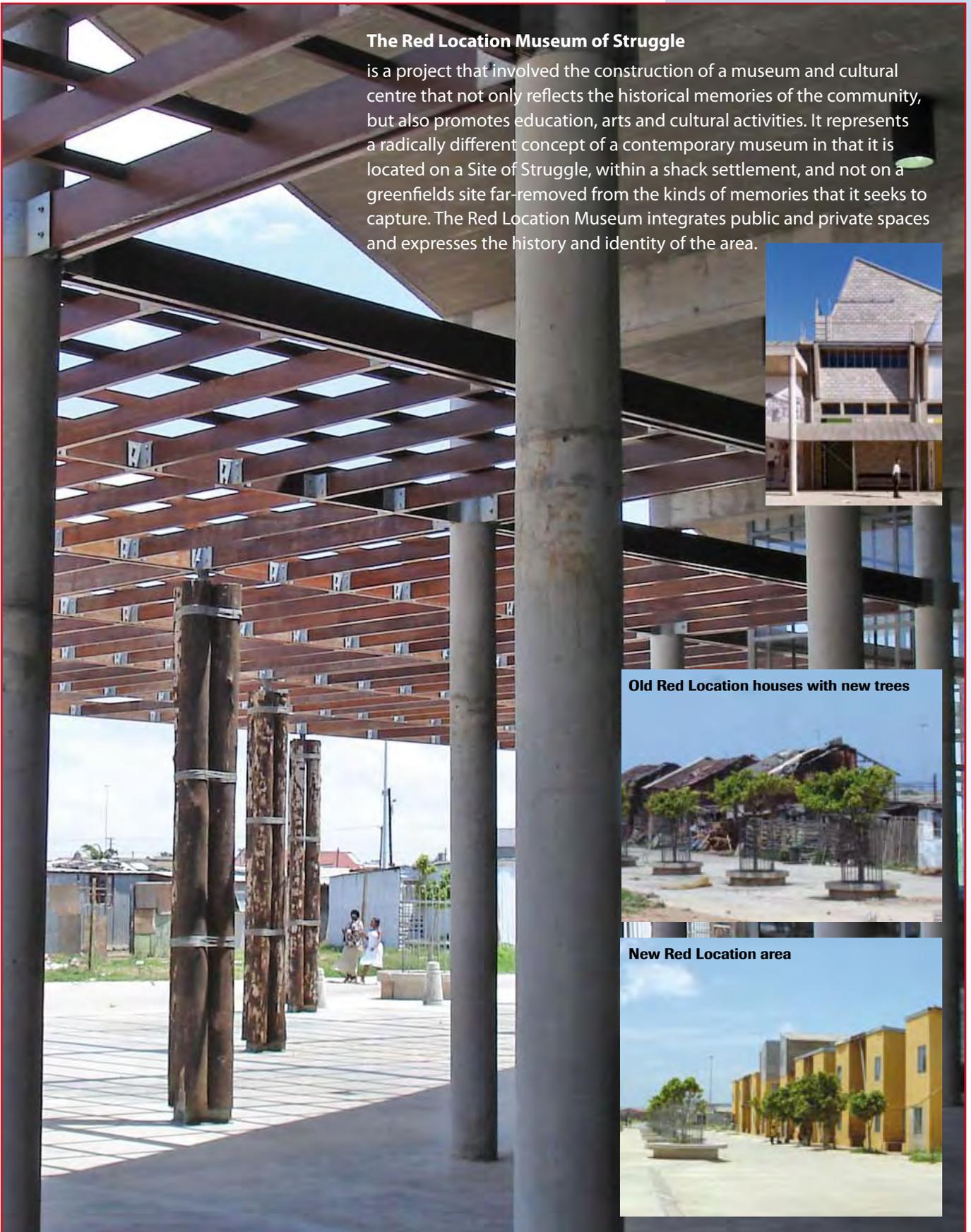
is a project that involved the construction of a museum and cultural centre that not only reflects the historical memories of the community, but also promotes education, arts and cultural activities. It represents a radically different concept of a contemporary museum in that it is located on a Site of Struggle, within a shack settlement, and not on a greenfields site far-removed from the kinds of memories that it seeks to capture. The Red Location Museum integrates public and private spaces and expresses the history and identity of the area.

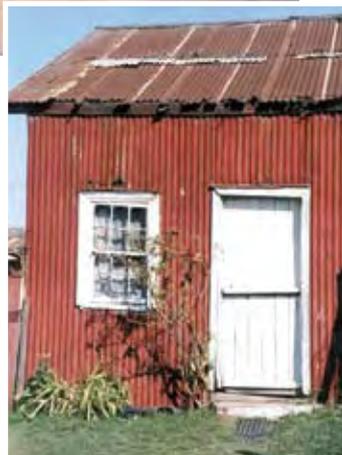


**Old Red Location houses with new trees**



**New Red Location area**





### Red Location

Red Location forms part of New Brighton which was established in 1903, as the first settled Black township in Port Elizabeth. The first dwellings erected in New Brighton became known as *Red Location*, due to the buildings being painted red. Many of these buildings were originally part of a Boer Concentration Camp in Uitenhage, housing a battalion of British soldiers. These corrugated iron houses were dismantled and re-erected in New Brighton by the Public Works Department on a strict grid system.

Red Location has remained the home of Black people from that time. As the first settled urban black community in Port Elizabeth, Red Location became an important site of struggle, and many prominent political and cultural leaders were either born or raised there. They include Govan Mbeki, Raymond Mhlaba, George Pemba and Dan Que Que. The first underground Mkhonto we Sizwe (MK) cell in SA was established in Red Location. The first passive resistance campaign against the pass laws was mounted in Red Location – tragically four men were gunned down and killed by the police at the entrance to the railway station in Red Location in 1949, in response to the campaign.

It is this historical background and cultural significance that inspired the vision of the leaders of the city to initiate a project that would lead to the transformation of Red Location.

Encouraging local culture and identity creates work opportunities at Galeshewe in Kimberley. Unique features developed by local people enhance identity, ownership and care for the environment.



#### GLOSSARY

#### MK

Mkhonto we Sizwe – Spear of the Nation – the armed wing of the ANC during the struggle (1961–1994)



## CHARACTER AND IDENTITY checklist

How do planning principles apply to character and identity?

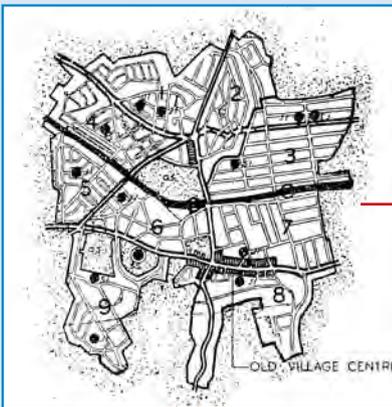


Principles	Applications	Results
<b>Poverty alleviation – meeting basic needs</b>	<ul style="list-style-type: none"> <li>• Provision of basic services</li> </ul>	<ul style="list-style-type: none"> <li>• Sense of dignity</li> </ul>
<b>Focus on special needs groups – HIV/AIDS affected persons, children, the aged and people with disabilities</b>	<ul style="list-style-type: none"> <li>• Provide parks for children, wheelchair friendly pavements, walls for art and craft areas</li> </ul>	<ul style="list-style-type: none"> <li>• More colourful and accessible areas</li> </ul>
<b>Gender equality</b>	<ul style="list-style-type: none"> <li>• Provide meeting place such as squares and parks</li> </ul>	<ul style="list-style-type: none"> <li>• Safe areas where the community can participate and have a sense of place</li> </ul>
<b>The natural (physical/green) environment</b>	<ul style="list-style-type: none"> <li>• Street furniture, parks, landmarks and swimming pools, greening, tree planting</li> </ul>	<ul style="list-style-type: none"> <li>• Leisure, recreation and social cohesion</li> </ul>
<b>Participation and democratic processes</b>	<ul style="list-style-type: none"> <li>• Involve all generations, ages and cultures</li> </ul>	<ul style="list-style-type: none"> <li>• Ownership and sense of place</li> </ul>
<b>Local economic development</b>	<ul style="list-style-type: none"> <li>• Create work opportunities by earmarking areas for unique development</li> </ul>	<ul style="list-style-type: none"> <li>• Investment and work opportunities</li> </ul>
<b>Accessibility – public transport and pedestrians</b>	<ul style="list-style-type: none"> <li>• Use different materials on different surfaces, wheelchair friendly pathways and specific street furniture, cycle paths, walkways, pedestrian crossings</li> </ul>	<ul style="list-style-type: none"> <li>• Safe flow of people and vehicles</li> </ul>
<b>Mixed-use development</b>	<ul style="list-style-type: none"> <li>• Buildings designed with specific themes, housing blocks and market-places with themes</li> </ul>	<ul style="list-style-type: none"> <li>• Sense of place</li> </ul>
<b>Corridor development</b>	<ul style="list-style-type: none"> <li>• As above</li> </ul>	<ul style="list-style-type: none"> <li>• As above</li> </ul>
<b>Safety and security</b>	<ul style="list-style-type: none"> <li>• Cameras, pedestrian crossings and proper lighting</li> </ul>	<ul style="list-style-type: none"> <li>• Safe environment, reduced crime</li> </ul>
<b>Variation and flexibility</b>	<ul style="list-style-type: none"> <li>• Using different materials and apply themes</li> </ul>	<ul style="list-style-type: none"> <li>• Sense of ownership</li> <li>• Interesting and beautiful environments</li> </ul>
<b>Densification</b>	<ul style="list-style-type: none"> <li>• Urban designs with proper controls, use of materials on buildings</li> </ul>	<ul style="list-style-type: none"> <li>• Liveable areas,</li> <li>• Orderly, neat, compact SCU's</li> <li>• An aesthetically pleasing urban environment</li> </ul>
<b>Reducing urban sprawl</b>	<ul style="list-style-type: none"> <li>• Densified development</li> <li>• Improve public transport</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable environment</li> <li>• More efficient and effective cities</li> </ul>



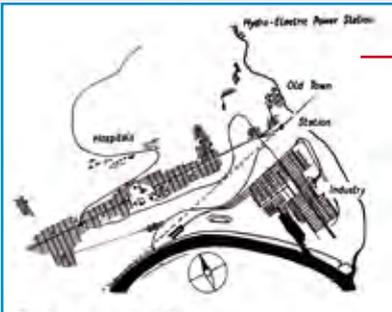
**Intricate minglings of different uses in cities are not a form of chaos. On the contrary, they represent a complex and highly developed form of order.**

Jane Jacobs



### ***Nodal development model***

The Nodal Development Model assumes an urban centre with radial roads and transport routes reaching out to the peripheral areas. The centre would contain major services and economic activities. In practice this model would exist only in smaller settlements as the need for alternative movement patterns in larger settlements results in by-passes, circular roads and new centres on the outskirts of the urban area or along such circular roads.



### ***Linear development model***

The linear development model has the main functions and services located along traffic and public transport routes. The residential areas and employment zones are developed parallel to the linear centre and access to the centre is provided perpendicular to the linear pattern. Often the residential and employment zones are located on either side of the centre in order to optimise transport movement.

### ***Combined models***

In the application of development models, combinations and alterations are common, as urban expansion in general is based on the existing historical built environment. The structures can be varied and different principles are applied particularly in large cities.

Historical nodal development with one main centre can grow, based on a multi-nodal structure with interlinking transport routes. Alternatively the centre can develop along main radial routes based on a linear pattern. Activity corridor concepts are an adaptation of the linear development model.



### ***Sustainable communities model***

The development models above tend to be based on the main centre function and the road and transport systems. In the sustainable communities model the focus is put on the needs of the household and the local community. The structure may include linear and nodal elements.

The scale and layout of the Sustainable Community Unit is based on walking as the primary mode of movement with a maximum walking distance of 2 km to essential services. Convenient access to public transport and employment areas is an additional key principle.

#### **GLOSSARY**

##### **radial**

going out from the centre

##### **peripheral**

on the outer edge

The spatial structure of a Sustainable Community Unit may include the following structural elements:

- Housing clusters
- Neighbourhood units
- Central nodes
- Activity corridors
- Public transport corridors
- Employment areas/Markets
- Urban agriculture
- Pedestrian/Cycle paths
- Public open space

### ***Housing clusters***

The primary structural unit in the Sustainable Community Unit is the housing cluster that would consist of a sustainable group of houses or blocks of flats. The cluster should promote the sense of identity and togetherness, which can be achieved through location around a common open space, along a short street or through the use of urban design features and landmarks. In the cluster area there should be a sequence of open spaces which can be private, semi-private and public.

### ***Neighbourhood units***

At the neighbourhood level the functional and social integration should be noticeable. The availability of services and employment areas, commercial centre and public transport would characterise the neighbourhood units. The structure would include different housing categories with a variety of housing types and densities. Pedestrian walkways will connect the housing clusters to the main services centres, employment areas and public transport nodes.

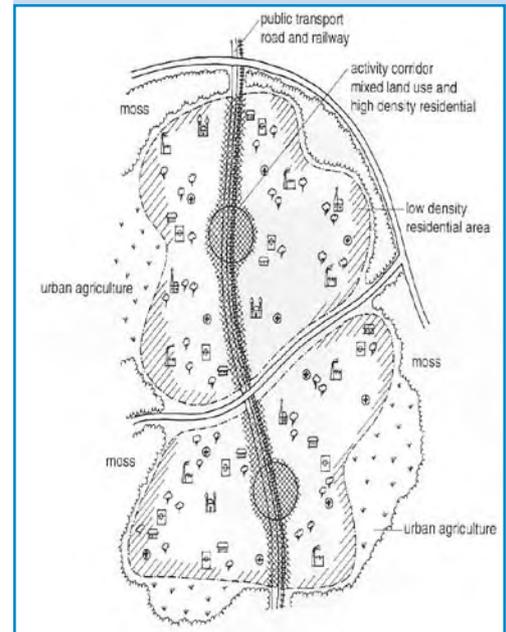
Neighbourhood units are often based on the catchment area for a primary school, with a clinic, local shops and recreational facilities at a maximum walking distance of 800–1000 m. Three or four neighbourhood units may support a local commercial centre, secondary school and community centre.

### ***Central nodes***

The daily needs of a household will, to a great extent, be met through small commercial centres in the neighbourhood units. More advanced service needs would be conveniently found in the local centre or in the main commercial centre of the community. In many cases this would be located at the transport node where public transport, private vehicular traffic and main pedestrian walkways meet. High density housing, commercial and social services and businesses would be found in central nodes.

### ***Activity corridors***

The activity corridor provides for the same functions as the central nodes but based on a different urban design concept. With the intention of facilitating mixed development and a more urbanised environment, the structure would be based on the linear development model. In the activity corridor an attempt is made to promote a more dynamic and flexible use of central areas.



**Schematic illustration of a Sustainable Community Unit**

#### **GLOSSARY**

##### **social services**

services provided by government to ensure the welfare of those in need





### ***Public transport corridors***

Public transport within an activity corridor would move at a speed adjusted to the active and mixed environment with frequent stops to achieve convenience and accessibility. The high capacity and efficient public transport routes that connect different parts of the community and link the different community areas with other centres, employment areas and commercial services in the Metropolitan area require special public transport corridors.

### ***Employment/Markets***

In immediate proximity to the housing clusters there should be home-based businesses, on-site urban agriculture and communal gardens. Mixed development will be encouraged in residential zones. In local centres and along activity corridors, more formal economic businesses will be found with easy access from home and accessibility for customers. Market areas for locally produced goods or retail services will be located near central nodes or along an activity corridor.

### ***Urban Agriculture***

Provision should be made to encourage people to grow vegetables and other produce on site. Within the housing clusters or in adjacent open areas, community gardens or allotment areas will allow for more efficient urban agriculture, resulting in produce that can be sold to shops or at the community market areas.

### ***Pedestrian/Cycle paths***

In a structure that is based on pedestrian movement as the basic design principle, pedestrian walkways and cycle paths are an important structural element. The network of pedestrian walkways and cycle paths would connect the housing clusters with main service facilities, employment areas and public transport.

The needs of children, the disabled and other vulnerable groups must be catered for in the design. Safety and security should be promoted by providing street lighting and avoiding route alignments through areas that cannot be put under surveillance. A child should be able to walk safely from home to school.

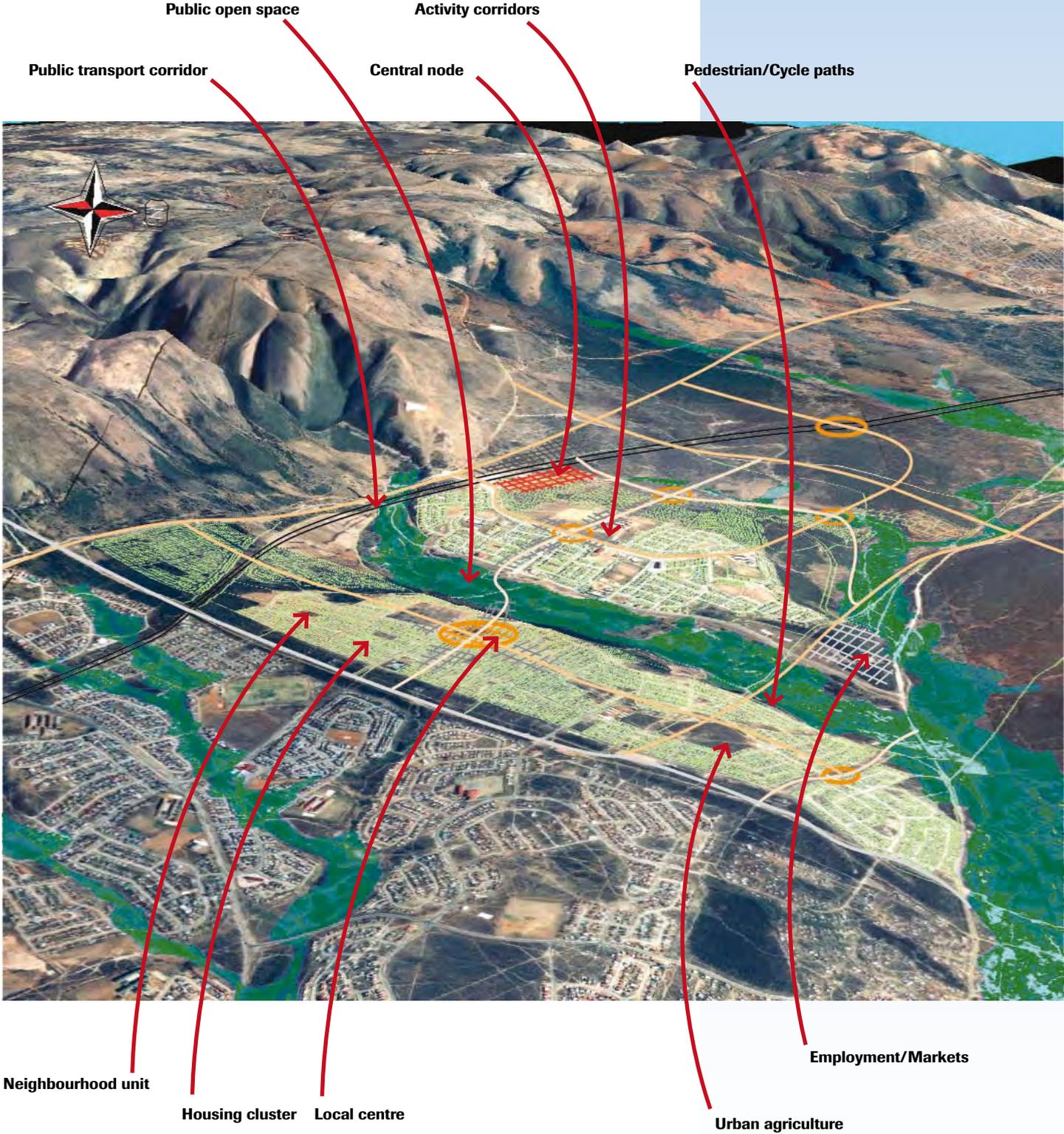
### ***Public open space***

The local public open space within the housing cluster will include playgrounds, meeting places and possibly allotments or a communal garden.

Within the neighbourhood units there would be public parks, sportfields, public squares and landscaped urban spaces.

At the community area level there will be major sports fields, open areas for community events, community parks and natural open areas available for recreation and sport. Suitable areas for Abakwetha will be identified in the community area plan. Sufficient land for cemeteries needs to be reserved.

Adjacent to the community area there will be protected open spaces, forming part of the main municipal open space system, with direct access from the community area on safe and convenient walkways.



The Bloemendal pilot project area with the main features of the plan proposals



