

Sustainable communities are living systems with different functional elements, which are guided in the planning process by the key development goals of integration and sustainability.

3

Spatial Planning

CHAPTER CONTENTS

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Housing
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GLOSSARY

mixed use development

mixes different functions such as business, residential and community facilities

segregation

separation of people, usually on a racial, ethnic or religious basis

dormitory

place for sleeping for many people

The planning of integrated and sustainable communities needs to take into account physical, social, environmental and economic aspects and goals. The spatial form arises from the planned integration of the built environment and its functional elements into the natural environment.

Spatial planning for existing and new areas has different limitations and possibilities, but both should remedy the distortions of apartheid and post apartheid township planning, which was characterised by segregation, urban sprawl and low quality dormitory settlements. Given these existing conditions, creating an integrated, compact and sustainable city will take time.

Functional elements

Sustainable communities are living systems, with different functional elements. In planning for sustainable communities these elements will be incorporated and will be reflected in the plan proposals and in the urban development pattern. The main functional elements are:

- Housing
- Work
- Transport
- Services
- Community
- Character and identity

The key development principles of integration and sustainability should guide the planning for each of these elements, and inform both spatial and non-spatial features. The character of a Sustainable Community Unit is determined by overall and neighbourhood layouts, building and housing types and design, accessibility of economic activities and services, community

participation and responsibility, safety and security, cultural identity and environmental care.

Planning principles

The sustainable communities planning approach is based on the following thirteen planning principles which apply in general, and to the six elements identified above:

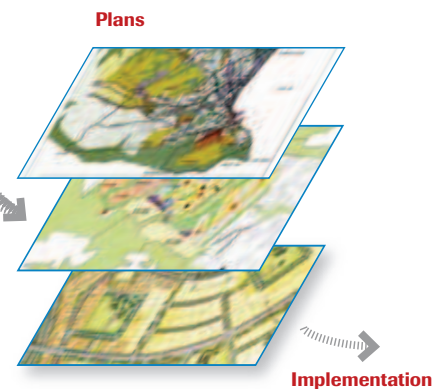
- Poverty alleviation – meeting basic needs
- Focus on special needs groups – HIV/AIDS affected persons, children, the aged and people with disabilities
- Gender equality and equity
- The environment – physical, social, economic
- Participation and democratic processes
- Local economic development
- Accessibility – public transport and pedestrian focus
- Mixed use development
- Corridor development – transport and activity corridors
- Safety and security
- Variation and flexibility
- Densification
- Reducing urban sprawl

Certain principles are of particular importance to particular elements, and these are highlighted in the checklists at the end of the following sections, that show how the principles apply to each element, and the results of their application.

INTEGRATION & SUSTAINABILITY

PLANNING PRINCIPLES

- Poverty alleviation – meeting basic needs
- Focus on special needs groups – HIV/AIDS affected persons, children, the aged and people with disabilities
- Gender equality and equity
- The environment – physical, social, economic
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- Mixed use development
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- Safety and security
- Variation and flexibility
- Densification
- Reducing urban sprawl



In many cities there are old urban areas containing good examples of characteristics of sustainable development – a variety of activities, mixed development, flexible housing, organised open space for pedestrians, safe paths for cyclists, green areas, parks and safe meeting places.





Densification in existing areas includes infilling and redevelopment

Nelson Mandela Bay Densification Policy

It is recommended that a collection of urban development strategies aimed at promoting growth that is balanced and fiscally, environmentally, socially and culturally responsible and accepted by all inhabitants. This approach, known as the “smart growth approach”, promotes growth and development in areas with optimal opportunity, and provides a solution to sprawl on the urban periphery.

A holistic approach integrating all facets of growth and development should be adopted. To achieve this, specific principles to guide densification are recommended as follows:

- Densification must contribute to the overall structure and functionality of the metropolitan area in that it takes place in a balanced, focused and structured way.
- Specific areas of opportunity or need for reconstructing should be identified (areas that should not be densified for specific reasons should also be identified).
- Areas targeted for densification should be treated as whole environments.
- Appropriate higher density housing opportunities at appropriate locations must be provided for all income groups.
- Areas targeted for densification should be well served by public transport in future.
- Retain, enhance and encourage cultural assets.
- Preserve and enhance open space, farmland, natural beauty and critical environmental areas.
- Encourage community and stakeholder collaboration.

There is a definite need to increase residential densities, but on the other hand there is a need to maintain and protect the existing unique urban character and environmentally sensitive, low density areas within the metropolitan boundary. The aim is to find the balance between conservation and urban densification.

Consultant's view on Densification

Zoning in Nelson Mandela Bay Municipality

Existing zoning schemes in the city were inherited from pre-1994 administrations, and are geographically based. There are currently 12 schemes in different areas, with significantly different land use categories, zones, development parameters, definitions and formats. These schemes are mostly outdated in relation to current developmental challenges, as they were designed to control rather than facilitate development. Being geographically based, they do not provide a consistent and unified basis for land use management.

The Sustainable Communities Concept needs to be complemented by the integration and modernisation of these schemes in a unified Land Use Management System and zoning scheme that:

- Creates clear links between various levels of planning from the SDF to zoning regulations
- Controls development rather than control
- Introduces zoning mechanisms to support the SCU concept
- Supports higher densities and mixed use development
- Allows zoning flexibility to adjust to changing circumstances and developmental and market needs
- Simplifies scheme regulation formats
- Uses the 13 SCU planning principals to formulate new land use and zoning categories and development parameters



New two storey housing estate

The Greenhouse Project

The Greenhouse Project operates from a revamped old potting shed in Joubert Park, Johannesburg. Its focus areas were:

- To provide a working demonstration of sustainable ways to plan, build, landscape, and manage energy, water and material resources;
- To support organisations working to improve the urban environment, particularly community based organisations, and
- To disseminate the information that will enable individuals in all sectors of society to sustainably improve the quality of life in their communities.

Reference Dorah Lebelo at The Greenhouse Project.

*E-mail: dorahl@ghouse.org.za
or www.greenhouse.org.za*



Adequate housing is a prerequisite for achieving poverty reduction. Housing provides a family with a home, but also a base for economic activities.



A house meets basic needs of human beings; providing a home for one's family is a great personal achievement and the most important investment of a person's life

GLOSSARY

functional integration

different functions such as living, working and recreation in the same area

surveillance

watching/keeping watch over

open space

public or private land used for parks, gardens, playgrounds, recreation and sport

3.1 Housing

The character and quality of housing is a primary determinant of the quality of the urban living environment. A house meets basic needs, provides the family living context and represents values and aspirations, becoming a home that may accommodate many generations. Providing a home for one's family is a great personal achievement, a source of self-worth and identity, and the most important investment of a person's life. The commitment of the SA government to subsidize access to housing acknowledges its importance as a basic human right.

Housing – integration and sustainability

Integration and sustainability should inform the sustainable communities approach to housing in terms of qualitative and structural characteristics, layouts and the relationship between different functions, uses, and spaces.

These principles apply to green field, upgrade, infill and new projects.

Integration manifests in:

- housing for a variety of socio-economic levels
- housing clusters
- mixed use
- variety of functions and services
- improved relationship between green and built environments
- variety of housing types
- variety of tenure options

Sustainability is realised by:

- housing quality, character and efficiency
- increased densities that improve urban and service efficiency
- eco-housing design – local resource use, types of materials, sanitation systems, energy conservation and renewable sources, and provision for waste minimisation and recycling
- housing clusters that promote social cohesion and local participation, organisation and responsibility
- mixed use housing that supports income generation and financial sustainability
- institutional support and good, cost-effective service provision
- municipal community co-operation in managing and protecting built and natural environments
- flexibility that accommodates growth, alternative household structures and changes over time, and meets the needs of the elderly, disabled and HIV/AIDS affected.

Increased residential densities

Sustainable development, efficient use of infrastructure and functional integration require more efficient land use and higher densities, based on new approaches in planning and new attitudes to housing, urban living and design. Existing densities of 20 to 30 units per hectare are too low to achieve efficient use of infrastructure, making services expensive and creating urban sprawl.

Higher densities:

- increase transport efficiency and lower costs
- decrease the need to travel, the time it takes, and resulting pollution



- enhance access to work, facilities and services
- increase access to services and decrease costs
- reduce site development costs

Higher density and a more compact urban structure can be achieved by:

- reduced erf sizes
- flats, 2–3 storey walk-ups, semi-detached, row and housing clusters
- infilling and redesign
- narrower access roads
- shared parking for housing clusters

Higher densities should specifically be encouraged at central nodes and along transport corridors, also in existing areas, together with infilling and redevelopment. Densities in most areas can be doubled without reducing access to open space. 70–100 housing units per hectare can function efficiently; semi-detached housing can achieve 50–60 units/ha, and two-storey townhouses are a space and cost-efficient option.

Higher density housing requires political support and community acceptance, based on awareness of its benefits and the costs of urban sprawl. The urban edge as a boundary that limits urban sprawl is a concept embodied in the Spatial Development Frameworks of most larger South African cities.

Good Sustainable Community type housing projects in South Africa

Port Elizabeth

Sakhasonke, Walmer

Missionvale low-cost housing

Sakhalunthu, Motherwell

Kimberley,

Eco Village, Galeshewe

Hull Street Housing Project

Johannesburg

Elengani social housing ,

Brickfields social housing

Ecovillage – Ivory Park, Midrand

Cape Town

Royal Maitland

Morgan's Village

Hanover Park

Joe Slovo



shared parking

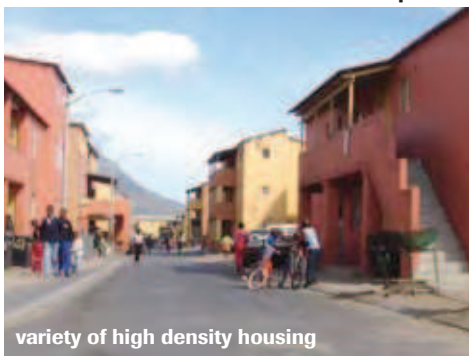
Attractive residential areas with higher densities enable efficient use of infrastructure and make services less expensive



High density housing promotes efficiency, accessibility and variation



well organised open space



variety of high density housing



playground in social housing area



semi-detached houses



Securing land for early implementation and future needs

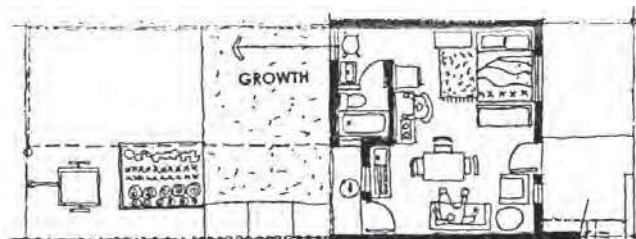


Identification of early implementation projects and prioritised land reserves as part of the implementation programme

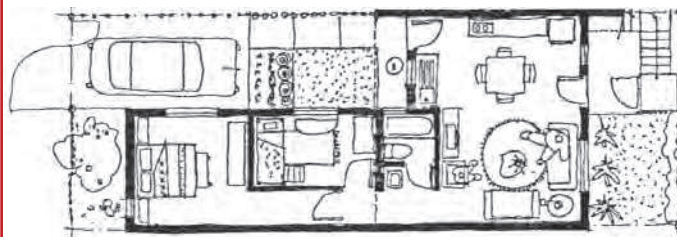


Land reserved for high density areas and activity corridor and infilling zones for prioritised implementation

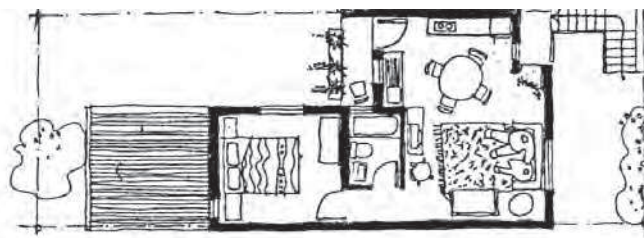
Incremental development of a house



Core house development to meet basic needs with indications for extension possibilities



Adding rooms to accommodate a growing family



Building a second floor to allow for extended family accommodation, tenants or home-based business on the ground floor



**What kind of house is this? he said,
where I have come to roam?
It's not a house, said Judas Priest,
it's not a house, it's a home.**

Bob Dylan
in The Ballad of Frankie Lee
and Judas Priest



Infilling achieves higher densities, integration and efficient land and infrastructure use. In most cases infilling contributes to an improved urban environment.

Example of new medium density housing in Richmond Hill, NMBM.





planned and designed for mixed use



playground near the housing area

Within a housing cluster, access to play areas, protected green areas, meeting places and safe walkways are promoted.

Basic services to households such as child care and provisions for home based economic activities are important.



planned and designed for possible extension

Housing clusters

Housing clusters of between 30 and 50 units should be the primary structural unit, with:

- location around a common open space or along short streets
- a sequence of private, semi-private and public open spaces
- playgrounds and crèches
- shaded meeting places, communal gardens or allotments
- access by car, or with a common parking area
- a primary movement network of pedestrian walkways and cycle paths
- layouts enabling surveillance of open spaces, pedestrian paths and access points
- different size units to accommodate different housing needs
- the possibility of extensions and complementary buildings for home-based economic activities and changing household needs

The size of clusters should be limited to avoid monotony and to facilitate a sense of togetherness with one's immediate community of neighbours.



walking distance to a crèche



well organised public open space

GLOSSARY

allotments

small individual garden plots in a communal garden area



Neighbourhoods

Functional and social integration should occur at neighbourhood level, with access to services, employment areas, commercial centres, public transport and recreational facilities. There should be a variety of housing types and densities, and pedestrian walkways and cycle paths connecting housing clusters with service centres, employment areas and public transport nodes.

Example of neighbourhood plan,
Housing Quality Study,
King William's Town



Housing and the environment

Sustainable housing has implications for design, choice of material, energy supply and conservation, sanitation, and local economic development. Provision for alternative energy production, water supply efficiency, local sanitation systems and alternative infrastructure systems should be considered in initial planning, also to allow for future choices. Sustainability is promoted by locating new development areas in order to protect environmentally sensitive areas, and to provide sufficient, appropriately designed common open space.

Local Agenda 21 encourages municipalities and communities to prioritise environmental sustainability, and sustainable community planning promotes this at the design stage, as a basis for ongoing environmental responsibility (see page 22).

Mixed development

Mixed development or functional integration involves integrating living, working, trading, service and recreational functions and facilities in local areas. Complementary functions increase accessibility, availability and variety, and reduce transport needs. Examples are:

- combined residential and business/trading units e.g. ground floor shop/workshop with upstairs accommodation
- social and community services in commercial centres and corridors
- small business activities in housing areas
- urban agriculture in backyards and larger common areas
- market places and shops in residential areas
- mixed uses within clusters and neighbourhood units
- special areas for mixed development near commercial centres, public transport nodes and along activity corridors
- use of schools as social and cultural centres for community meetings, adult education, recreation, sport and entertainment
- co-location and resource sharing among community services e.g. ward offices, housing and business support centres and municipal offices



Provision for alternative energy production should be considered in initial planning

GLOSSARY

environmental sustainability

the ability of an environment and its key natural processes to continue to function in a healthy manner

monotony

boring repetition

Local Agenda 21

The United Nations international local governments programme for environmental sustainability in the 21st century

energy conservation

using less energy

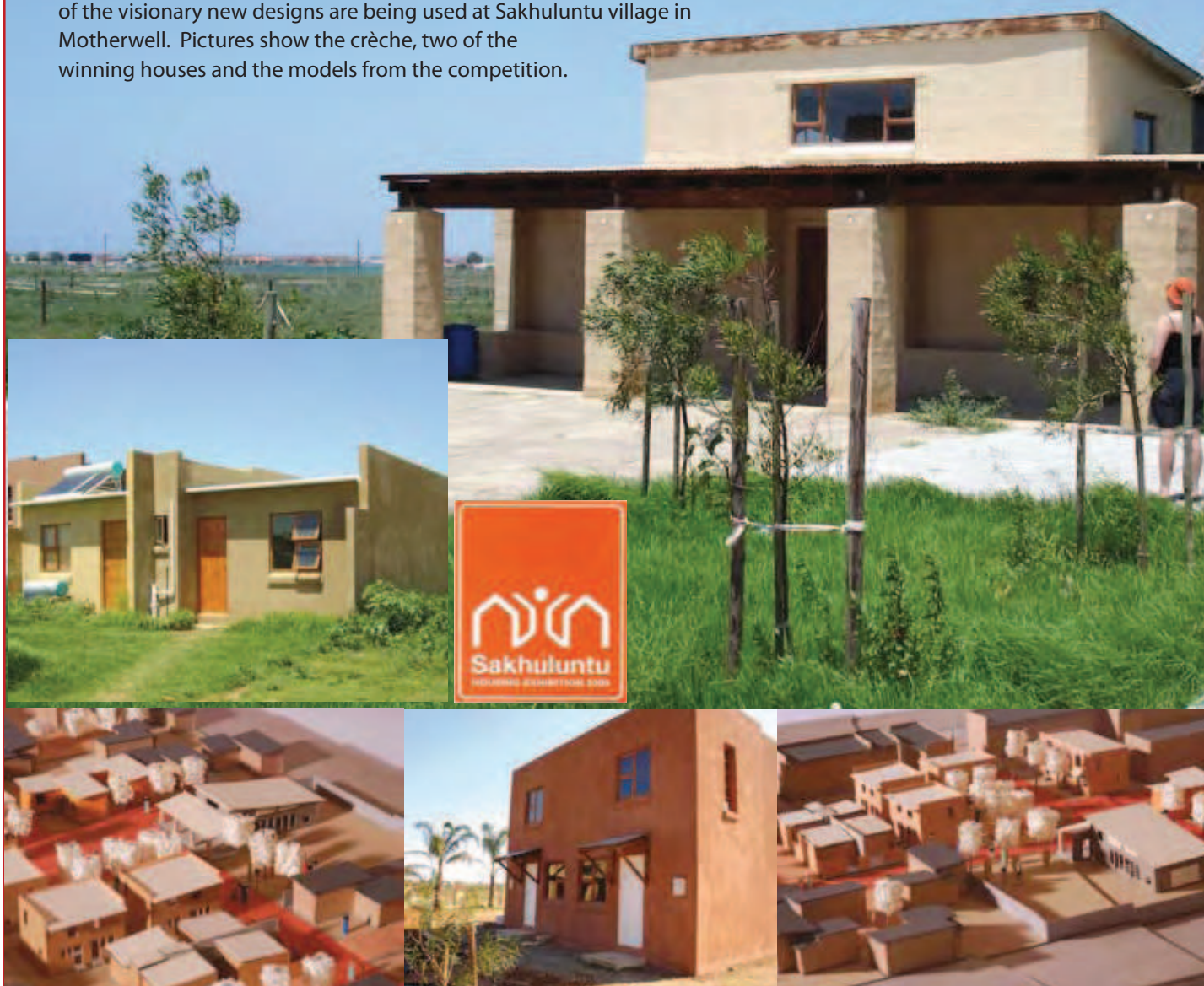
recreation

non-work activities that are healthy and regenerating



Affordable high density housing competition, NMBM 2004

An architectural competition was held in 2004 in which South African and Swedish architects were challenged to submit proposals for innovative higher density housing designs for the subsidised sector in urban areas. One of the objectives was to actually build the winning proposals. In a first phase, 10 show houses were built in Motherwell, township approximately 20 km from Port Elizabeth. There are eight South African designed units and two Swedish designed units including single and double storey, semi-detached and row houses. Some of the visionary new designs are being used at Sakhuluntu village in Motherwell. Pictures show the crèche, two of the winning houses and the models from the competition.



Sakhuluntu high density housing, NMBM

GLOSSARY**affordable housing**

housing for low income households, which is usually subsidised

tenure

legal form of right of use, e.g. ownership or renting



Housing diversity

Mixed housing types promote socio-economic, cultural and ethnic integration via co-operation and interaction between different groups, both formally and informally at schools, recreation facilities, shopping areas, and work places. Different housing types and designs cater for different preferences and means, and enhance neighbourhood variety and character, as do self-built housing and extensions.

Tenure and financing options

Different tenure options should be available to meet different needs:

- individual title
- communal or sectional title ownership
- rental

Social housing includes a range of rental options that is supported by government policy in SA. Financing options for owned housing include:

- subsidy or grant funded
- subsidy plus own contributions or loan financing
- loan financed
- self-financed

Variation and flexibility

Mixed development and different housing types enhance the environment by creating variation and flexibility, which provide residents with a wider range of choices and opportunities. For subsidy houses, extensions and second dwellings on-site enable incremental development and interesting re-design possibilities, in response to growth and changes in families and increased financial means. Flexibility in zoning enables mixed uses, change of use and sub-divisions. Physical and socio-economic diversity enable flexibility and growth, as community and household needs and standards of living develop.

Urban planning should result in attractive, pleasant and functional built environments characterised by:

- variety, and variation over time as communities develop
- a mix of land uses
- layouts designed primarily for walking and cycling
- communal meeting places
- vegetation and greening
- well maintained, attractive public open spaces
- good quality housing clusters

Improving the quality of life in the built environment in new and existing areas can be achieved through variations in house types, heights, densities, tenure options and mixed development. Housing diversity promotes physical, functional and socio-economic integration, economic development and sustainability through local economic opportunities, more interaction between different groups and more efficient use of resources.

Social Housing

Social Housing is affordable, medium to high density housing for rental, instalment sale or co-operative ownership that is managed by an institution. SA National Housing Policy provides a regulatory framework, funding, and institutional and capacity building support for six social housing options:

- *Social Housing* – medium and high density rental accommodation
- *Rental Housing* – small formal private and backyard rental options with minimum norms and standards in existing as well as green field areas. Home improvement grants are available.
- *State Owned Rental Housing* – management of Provincial or Local Government rental stock. Transfer of this stock to Social Housing Institutions is promoted.
- *Hostels* – upgrading or conversion of public sector hostels for rental purposes
- *Transitional Housing* – rooms for short term rental (max. 24 months)
- *Communal Housing* – co-operative rental housing for special residents/special needs groups. It includes provision of rooms for rental with communal facilities.



Variation in social housing blocks, Brickfields, Johannesburg





Compare poor examples in the red frames with the others. Good quality, dynamic urban environment are created through variation and flexibility. Functional and social integration are supported by mixed development and economic activities.



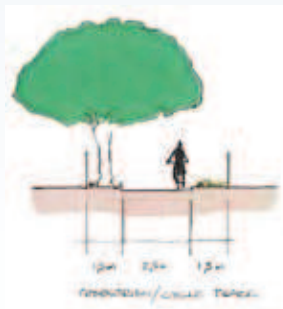




Walkways must allow surveillance for security reasons



Roads should have marked sections for cyclists. The best solution is separate paths for pedestrians and cyclists.



Neighbourhood safety and security

Improved safety and security in community areas and neighbourhoods is a key concern for urban planning. Mixed development and higher densities facilitate surveillance and mutual support among neighbours, tenant associations, street committees and neighbourhood watches. Layouts should avoid:

- isolated housing and recreation areas
- narrow passages
- concealed corners
- dark under-passages and tunnels
- areas not accessible to surveillance

Mixed development contributes to safety and security, as areas are inhabited throughout the day, while residences in commercial areas and activity corridors means these areas are not deserted after working hours.

Traffic safety and accident prevention are an essential aspect of social safety, and should influence road design, traffic systems and control, and provision for pedestrians and cyclists. The design of housing areas, commercial centres and movement routes should have the safety of people in the traffic environment as a key objective (see transport section).

Children, women, the elderly and disabled are more vulnerable to crime and accidents, and planning should assess and provide for safety and security needs, particularly of vulnerable groups.

Housing and disadvantaged groups

It is important to consider and support disadvantaged groups that have difficulty in acquiring adequate housing. The poor need:

- self-help housing processes and phased construction options
- assistance to access subsidies
- special institutions and arrangements for loans and repayment of loans
- subsidised or partly free basic services
- assistance with establishing housing co-operatives and associations

In addition, particular disadvantaged groups such as the disabled need:

- access to appropriate housing
- housing designs that can be adapted to the needs and care of the disabled
- ramp access to public and other buildings and sidewalks

A particular concern is the impact of HIV/AIDS on housing needs. A community area plan should provide for affected households by enabling additional buildings or extensions, and designs that enable home-based care, the care of orphans in extended families and linked household configurations to support child-headed households.

GLOSSARY

manoeuvrability

ability to move about easily



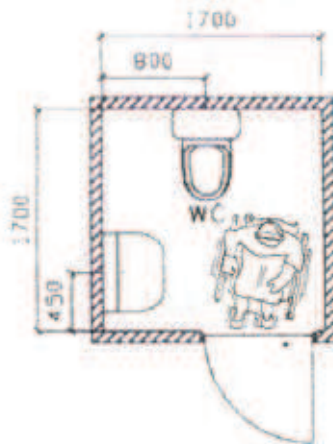
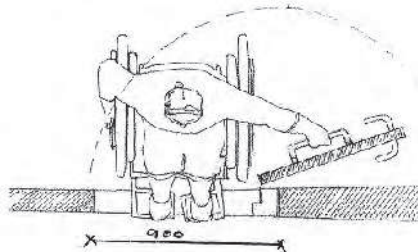
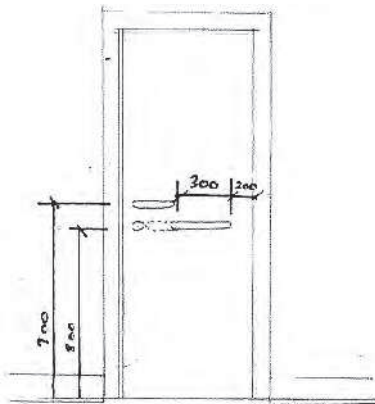
Design for the disabled

There are almost 2 million disabled people in South Africa, many of whom are poor and lack adequate housing. The disabled require design or adaptation of the built environment and housing to enable access and facilitate everyday activities. Key design considerations for disabled people are:

- Access to sidewalks, buildings and rooms in buildings via ramps and ground floor location of essential facilities (if no lifts)
- Pedestrian crossings (with audible signals for the blind if at traffic lights)
- Household design for access and manoeuvrability (e.g. width of doorways)
- Reachable surfaces, door handles, taps and switches
- Lower window heights
- Appropriate toilet, bath and shower design (access, space, handrails etc.)

People with any form of disability benefit from safe and secure local environments with low speed traffic, as well as provision for walking and cycling and quality open spaces.

For details on designing housing for the disabled, see *Open the door for the disabled – Adapting low cost housing for the physically disabled*, a Pelip Housing Company booklet, funded by Sida.



People with any form of disability benefit from a safe and secure local environment.





Useful contacts

HIVNET www.hiv.net
 HEARD www.und.ac.za/und/heard
 UNAIDS
 e-mail: unaids@unaids.org

HIV/AIDS and Spatial Planning

'Spatial Planning, Land Development and Land Use Management in the Context of HIV and AIDS', prepared for the SA Cities Network by Development Works is a useful document that deals with:

- the life cycle of HIV/AIDS
- the impacts of spatial and structural factors on HIV/AIDS
- the impacts of HIV/AIDS on land and spatial development
- the burden of extra AIDS mortality on land, and possible responses
- HIV/AIDS and the institutional capacity of local government
- recommendations to address the situation

For the full report see www.sacities.net – go to 'Special focus on HIV/AIDS'

Reference:
 Southern African Cities Network HIV and AIDS research Series: Challenges and responses for Developmental Local Governments, 2006



HIV/AIDS and the built environment

Kevin Bingham, School of Architecture, University of Natal has researched the impact of HIV/AIDS and its implications for the built environment. His paper 'The impact of HIV/AIDS on building types in selected areas of the KwaZulu-Natal, South Africa' deals with:

- the epidemic profile and its spread
- the nature of the problem and its impacts
- time frames of the impact on the population
- numbers

The paper looks at the impact of the epidemic in both urban and rural contexts and at specific building types affected. These include housing, health facilities, children's homes, street shelters, mortuaries, funeral parlours and crematoria, hazardous waste disposal units and buildings for education.

AIDS brief for Architects

'AIDS brief for professionals – Architects' by Kevin Bingham and Rodney Harber, School of Architecture, University of Natal (funded by USAID) is a useful pamphlet on AIDS and designing different types of buildings.

Summary

Architects, together with their associated members in the Design Team, are increasingly being faced with the realities and complexities of HIV/AIDS, and its impact on the built environment. The needs of the past will not necessarily be the needs of the future and AIDS will make its mark on the profession. Architects must endeavour to:

- Attain sufficient training and education on matters relating to the provision for those with HIV/AIDS
- Creatively consider new methods of improving the accessibility to and comfort within their architecture, suited to the needs of people living with HIV/AIDS
- Transform their Client's attitudes to make allowance and provision for the adaptability of their buildings to suit the needs of people living with HIV/AIDS. This should include easy adaptation for future redesign and reuse.

Checklist

- ✓ Am I contributing to the spread of HIV/AIDS by designing vulnerable building types e.g. single sex hostels, casinos, barracks and workers' camps on remote sites?
- ✓ Can my design present opportunities for the prevention of HIV/AIDS, e.g. murals, counselling facilities, or user-friendly spaces for affected persons?
- ✓ Does my housing design support the potential for home-based nursing for infected persons or mutual help for supervising orphans?
- ✓ Is the design flexible enough to accommodate evolving changes of use?

Source: RICS Research Foundation, 1999, <http://www.rics.org.za/builtenviromet>
 Reference: HIVNET

Current Housing Delivery Terminology**GAP Housing**

The GAP market – people earning R3500 to R10000 (household income) per month. They do not qualify for state housing subsidies, but don't earn enough to participate in the competitive property market, which has escalated dramatically over the last five years.

Affordable Housing

Affordable Housing refers to housing for people earning between R1500 and R7500 (household) per month who will qualify for a subsidy deposit from government, about 50% of a required deposit.

Inclusionary Housing

The policy framework for inclusionary housing is still under development, but aims to get private housing delivery initiatives in the middle/higher income groups to include affordable housing opportunities, in order to achieve a better socio-economic balance and to contribute to the supply of affordable housing.

Bonded Housing

Housing developed by means of a bond granted by a financial institution, usually associated with private sector/open market housing.

Subsidised Housing

Housing opportunities where the cost is fully or partly subsidised. In the current SA context this typically refers to the Government Subsidy Scheme, but it could also apply to other Housing Subsidy Instruments such as those of some major corporate institutions

Housing Subsidy Instruments

The following housing subsidy instruments are currently provided by the SA Government:

Individual Subsidy – enables qualifying beneficiaries to obtain a site plus a basic house

Consolidation Subsidy – enables qualifying beneficiaries to build a house on their own site

Project Linked Subsidy – enables qualifying beneficiaries to obtain a complete residential unit in an approved project

Institutional Subsidy – for institutions to enable them to develop affordable housing

Rural Subsidies – for housing for beneficiaries on land belonging to the State and/or governed by traditional authorities. The subsidies are only available on a project basis.

People's Housing Process – supports households who wish to enhance their housing subsidies by building or organising the building of their homes themselves.

For details on each subsidy type, see

National Department of Housing – <http://www.housing.gov.za>

What is a Housing Subsidy?

A Government Housing Subsidy is a grant provided by the Government to qualifying beneficiaries for housing purposes. The grant is only used for the acquisition of housing goods and services for the provision of complete houses that comply with the minimum technical and environmental norms and standards.



HOUSING checklist

How do planning principles apply to housing?



Principles	Applications	Results
Poverty alleviation – meeting basic needs	• Appropriate standards for water, sanitation, roads & stormwater and housing • Space for home-based economic opportunities • Self-built housing and local labour	• Improved living standards • Service availability • Increased household income • Skills transfer
Focus on special needs groups – HIV/AIDS affected persons, children, the aged and people with disabilities	• House design and flexibility to enable home-based care • Improved care and support	• Increased access • Integration and acceptance in community • Lower costs of care
Gender equality	• House designs facilitate household work • Layouts enable surveillance	• Time and effort saved • Improved safety and security
The natural physical/green environment	• Ecological materials • Waste minimisation, waste collection and recycling • Greening • Wind orientation offers opportunities for wind turbines and renewable energy source • Solar heating	• A more attractive and healthy environment • Lower costs
Participation and democratic processes	• Consultation and input in designs and types of housing • Involvement in building and maintenance	• Meeting needs and priorities • Sense of ownership and responsibility • Work opportunities
Local economic development	• Home and cluster based work and trading spaces	• Increased local economic activity, incomes, spending, circulation of money, and community wealth
Accessibility – public transport and pedestrians	• Mixed use and proximity to services	• Reduced traffic and transport costs and increased accessibility
Mixed-use development	• Houses include workspaces, and shop fronts • Allow extensions and additions	• Local economic development • Transport reduction
Corridor development	• Mixed use, higher density housing	• Improved accessibility • Local economic development
Safety and security	• Design for surveillance and security	• Decreased crime
Variation and flexibility	• Housing types • Tenure types	• Greater choice and appropriateness of housing
Densification	• Clustering of houses, smaller erven, and communal open spaces	• Lower service costs • Increased access to services
Reducing urban sprawl	• Clustering of houses and higher densities	• Improved access to services • Improved access to public transport • Reduced infrastructure costs

for your notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no text or other markings on the paper.



Child care, crafts production and small businesses are some examples of home-based economic activities. They require flexible house designs, market places, playgrounds, crèches, etc



3.2 Work

The planning of Sustainable Community Units should support local economic development (LED) in spatial and functional terms. Mixed use opportunities promote local work, trading, income generation and circulation of money, which enhance economic and social integration and sustainability.

Work can be integrated by providing opportunities in local industrial areas, commercial corridors and nodes, public spaces, market places and homes. Work includes essential processes such as producing, trading and consuming goods and services, whilst maintaining the built and green environment. Work is the primary, though not the only means of obtaining income with which to meet needs, and is thus the key means to economic sustainability.

Types of economic activity with specific requirements and characteristics are:

- home-based economic activities
- employed work – formal employment
- urban agriculture, local livelihood and food security
- informal economic activities
- formal businesses
- self-employment
- work in public works programmes
- non-profit sector work and service provision
- local economic development support

Home-based economic activity

Home-based economic activities cover a wide range of work that may be income generating or voluntary. They include professional and artisan services, but also household work, child care and domestic service. It is important that plans and land use management regulations facilitate such activities. Basic requirements are:

- good household, cluster and neighbourhood design
- accessibility of goods and services
- child care and safety
- co-operation and mutual support
- a quality local environment



GLOSSARY

artisan

someone practising a trade

adjacent

next to

land use management

management of how land is used in an area



Employment

Most poor people prefer employment with a regular income, and are prepared to travel great distances to jobs, largely by taxi and public transport, at significant cost. Supportive measures include:

- reduced travelling distances
- cost-effective public transport
- adjacent industrial areas accessible on foot or by bicycle
- local job opportunities via mixed development and mixed income areas
- local activity corridors and commercial centres
- local markets and low-cost trading spaces
- units and centres for economic activities.
- home-based small businesses

Informal economic activities

Informal businesses are an important source of livelihood income and the starting point for formal businesses. The informal sector is often the entry point to more entrepreneurial initiatives and should therefore be valued as a 'breeding ground' for formal businesses. Spatial planning should take into account and provide space and services for the informal sector which is supported by:

- mixed development enabling activities in homes, yards, and second buildings
- flexible zoning regulations (but not allowing disturbing or polluting activities)
- easy local access to customers via street stalls and marketplaces
- business support centres



Activity corridor – high density mixed use development, work and housing can be combined



Space for small businesses on the ground floor of houses promotes mixed use and local economic development



Inventive use of containers for informal businesses brings goods and services closer to housing areas

GLOSSARY

informal economic activity

any activity of production, trading or service provision done informally





Social housing in Brickfields, Johannesburg includes space for small businesses on ground floor level facing the street. The work opportunities and services add to the attractiveness of the area.

Flexible regulations and enabling land use management are important to promote informal and small scale businesses.



Local economic development (LED) projects

Public sector and non-profit projects generate part and full-time employment and incomes. Municipal and community partnerships can provide local services and create local jobs and part-time work. Removing refuse, cleaning streets, and developing and maintaining parks and public open spaces are examples. Government and non-government funding can be accessed for such initiatives. Promotion of public-private and community based partnerships can provide work and employment as well as facilitate service provision and maintenance.

Local Economic Development

Local Government is not directly responsible for creating jobs. Rather it is responsible for taking active steps to ensure that the overall economic and social conditions of the locality are conducive to the creation of employment opportunities. This includes:

- addressing market failure
- strengthening competitiveness of local firms
- removing bureaucratic obstacles for local firms
- creating a unique advantage for the locality and its firms

Principles of sound LED

- pursue demand and opportunity driven approach
- start with low-cost activities
- use what is there – don't build parallel structures
- pursue bottom-up approaches
- build trust, collaboration and synergies
- empowerment through training, on-the-job learning and coaching
- take ownership and responsibility



The Kopano Women's Bakery in Ikhukseng township at Warrenton is a successful LED funded project which is run as co-operative business

The Expanded Public Works Programme

The Expanded Public Works Programme (EPWP) is a five year national government initiative aimed at drawing one million unemployed South Africans into productive work in a manner that will enable them to gain skills and increase their capacity to earn income. The initiative is being implemented through established government structures and within existing budgets. The implementation of the EPWP is being co-ordinated by the Department of Public Works (DPW), which has established a dedicated EPWP Unit. The EPWP is being implemented in four sectors – Infrastructure, Social, Economic and Environmental, and specific government departments have been designated to drive the EPWP in each sector. However, implementation of the EPWP depends largely on municipalities.

GLOSSARY

land use management system (LUMS)

a working document that governs development in an area

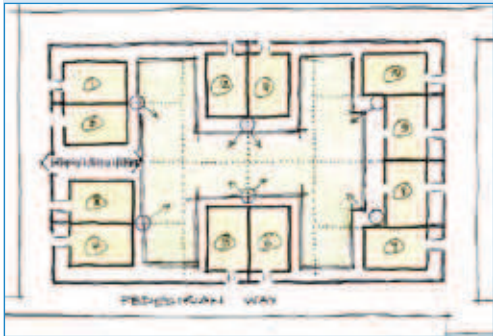
public-private partnership

formal co-operation between government and business

coaching

helping people improve their performance by facilitating reviewing, evaluating and planning, and by giving feedback and advice





Urban agriculture increases food security for poor households, provides supplementary income and supplies urban areas with agricultural products.



Business support centres and training facilities are essential for the transformation of informal and emerging businesses into established enterprises.

Urban agriculture

The provision of food security is closely linked to the house and its immediate surroundings. Spatial planning must incorporate small scale, family based on-site urban agriculture, which will allow for food production to complement the household meals or income through sale at market places. Food security should be supported by:

- planned spaces for local urban agriculture at household and neighbourhood levels
- local market places where surpluses can be sold to generate income
- allotment, communal and school-based food gardens
- support with management, resources and training

Well-managed community vegetable gardens can create part-time jobs and incomes. Environmentally sound practices such as organic gardening, composting of local organic waste (a key strategy for waste minimisation), and use of grey wastewater are desirable.

Urban agriculture sites should be an important component in the spatial structure. Schools offer sizeable and under-used sites for community gardens, which can also be used for environmental education of learners. Street and open space greening is essential to enhance the quality of urban environments, and provide an opportunity for income generation via municipal community partnerships



Entrepreneur development

Local economic development depends on local businesses, trade and services developing to meet needs and generate local income and employment. Informal businesses should be supported to develop into established enterprises that are able to remain in community areas. As they grow, they can move from being home-based, to local commercial premises in centres, along corridors or in small-scale industrial parks. The non-spatial aspects that include training, marketing support and financial support should be available in the community areas and would be located in the Local Commercial and Social Service Centres or at special Local Business Support Centres. Entrepreneur development requires support in terms of:

- spaces to operate
- local marketing opportunities and sites
- local services
- training, marketing and financial support
- coaching and mentoring

GLOSSARY

entrepreneur

someone who starts and runs a business

entrepreneur development

training and support for entrepreneurs

food security

having enough food on a sustained basis

organic gardening

gardening using only natural compost and substances to increase soil fertility and control pests, diseases and weeds

mentor, coach

someone with experience who helps others to succeed

mentoring

guiding the development of another



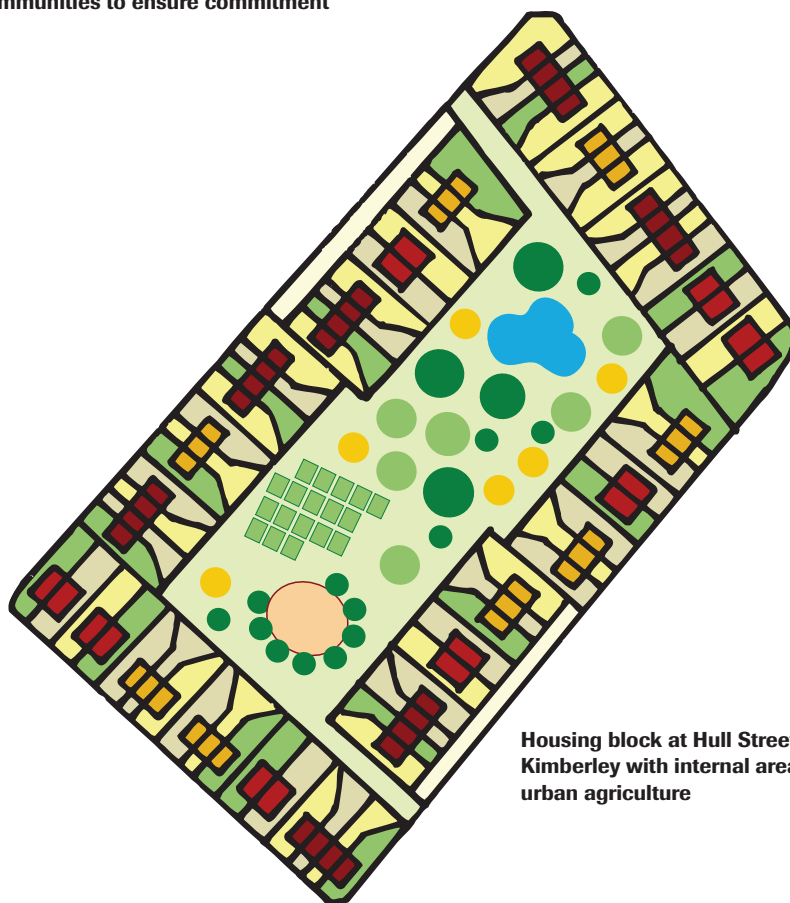


Convenient access to markets is crucial for small business and urban agriculture.



Areas for urban agriculture should be established in consultation with the communities to ensure commitment

Vegetable field project in Bloemendal, Port Elizabeth



Housing block at Hull Street, Kimberley with internal area for urban agriculture



Galeshewe Urban Renewal Programme and its Open Space and Landscaping Plan

The importance of water as a source of life can never be over-emphasised, and managing water as a scarce resource is necessary for all kinds of development in our municipalities. We need to invest in water conservation and make the best use of water, for example by re-using treated effluent water from wastewater treatment plants.

In May 2005, four new, quality play parks were opened, as part of the Galeshewe Urban Renewal Programme (GURP) and its Open Space and Landscaping Plan. Stakeholders include DHLG, Sol Plaatje Municipality, the Expanded Public Works Programme (EPWP) and local communities, who played a crucial role in identifying the land and planning the parks. Mazzoncini and Marais Horticultural Services was appointed as the implementing agency.

The new parks will be irrigated using treated wastewater. This project demonstrates the importance of water for improving peoples' living environment, and creates new jobs through co-operation between public, private and community sectors.



This project creates new jobs through co-operation between public, private and community sectors



Besides developing parks and playgrounds, the Urban Renewal Programme also includes major rehabilitation of stormwater drainage. All workers, both men and women, were trained to use maintenance equipment. Workers themselves determine who should work with what equipment, and they take turns to develop their skills.





An emerging contractor's story

In 1998, Jesse Chikane started out with virtually nothing but the aim of becoming a successful building contractor. What got her going was being awarded a contract by the Department of Housing to build ten low cost houses. Before becoming a contractor on the Hull Street project in 2001 she had already employed 12 people, of whom 2 were qualified artisans. Today her company, RJC Construction employs 32 people full-time, including six artisans, plus an average of 27 casual workers. RJC owns a three-ton truck, bakkie and microbus, plus building equipment, and has no debt.

Working on the Hull Street project has helped RJC access training and develop their construction quality to meet the standards of the National Home Builders Registration Council (NHBRC). Jesse has developed a good working relationship with the municipality and Housing Company, and found their purchasing of materials particularly helpful in terms of obtaining credit and good prices for bulk orders.

Jesse is currently busy with two other contracts besides units at Hull Street: renovation of a school, and building facilities at a cricket stadium. Her aim is to grow her company over the next five years to employ about 100 people.



Jesse's tips for entrepreneurs

- believe you can do the impossible
- take the lead, even if conditions are harsh
- treat your staff as family
- make decisions together with staff
- be open with staff
- don't be selfish
- be ahead – plan today for tomorrow
- be careful with money – don't spend unnecessarily
- get tough with staff when necessary – the business carries the staff and the staff carry the business



WORK checklist**How do planning principles apply to work?**

Principles	Applications	Results
Poverty alleviation – meeting basic needs	• Appropriate standards for water, sanitation, roads & stormwater and housing • Space for home-based economic opportunities • Self-built housing and local labour	• Investment and funding • Opportunities for work • Less crime
Focus on special needs groups – HIV/AIDS affected persons, children, the aged and people with disabilities	• House design and flexibility to enable home-based care • Improved care and support	• Opportunities for care giving
Gender equality	• House designs facilitate household work • Layouts enable surveillance	• Recognition of the value of unpaid work by women • Support for home-based income generation
The natural – physical/green environment	• Tourist stalls and areas for recycling, cleaning and refuse centres, community based businesses, tree planting projects	• Opportunities for local maintenance, service activities and income generation • Enhanced tourism potential • Enhanced identity
Participation and democratic processes	• Public participation towards future work opportunities that may arise. • Mobilisation of communities • Establishment of local support centres	• Reduced local unemployment
Local economic development	• Create opportunities for SMMEs and skills development • Multi-purpose job creation and business support centres	• Opportunities for work • More self-employment
Accessibility – public transport and pedestrians	• Work provided within walking distances and along public transport routes	• Mobility and accessibility to and from work and home
Mixed-use development	• Combine uses such as housing, business, community, recreation, education and work	• Local Economic Development • Money stays in area increasing local buying power
Corridor development	• Provide public transport • Promote higher levels of economic development along corridors	• Viable public transport • Improved accessibility to work/employment
Safety and security	• Establish Community Policing Forums • Locate works places close to places of residence and along main routes • Promote varied activities on streets	• Reduced health, insurance, policing and correctional services costs • Enhanced investment, mixed income levels and tourism potential
Variation and flexibility	• Different informal and formal work opportunities	• Reduced crime, integration of 1st and 2nd economies
Densification	• Promote work opportunities along corridors and in multi-purposes centres	• Threshold population that supports local economic activity
Reducing urban sprawl	• Economic/work opportunities provided within close walking distances and along public transport inside the urban edge	• Work closer to home • Economic injections • Reduction in transport costs

for your notes

REFERENCES

Successful LED Projects in the Northern Cape (including guide-lines for LED) available from MTI, Municipal Training and Development Institute, Kimberley 053-830 6320
www.solplaatje.org.za
e-mail: mvzyl@solplaatje.org.za



Quality services are a key determinant of quality of life

3.3 Services

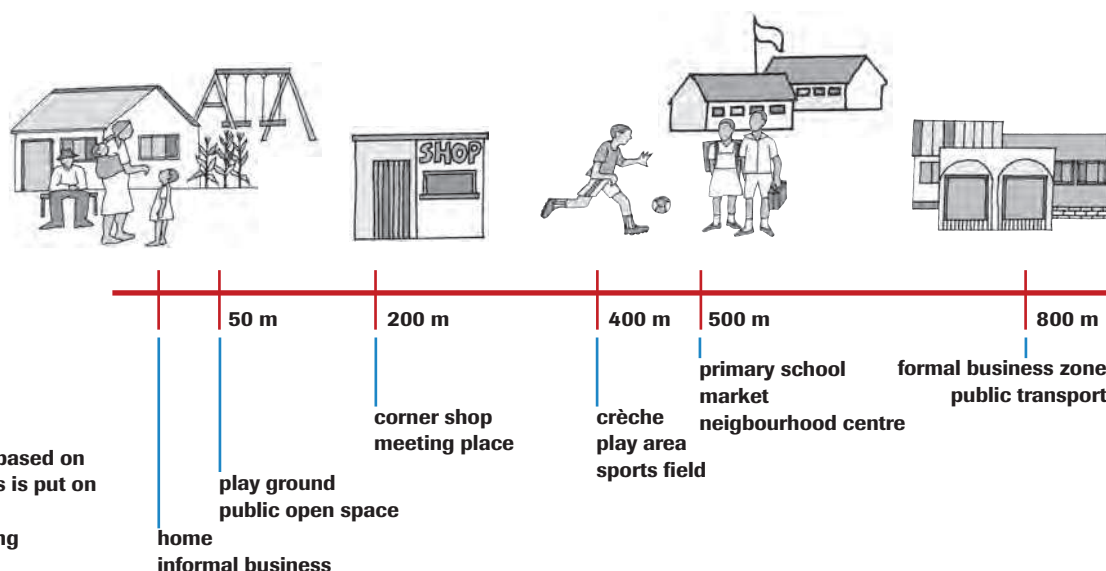
The availability and quality of services is a key determinant of the quality of life. Provision needs to be planned for essential services such as:

- water and sanitation
- waste removal
- environmental care
- electricity
- telephones
- health services
- educational/cultural services
- policing
- social and welfare services
- commercial services
- roads and stormwater drainage

Services, integration and sustainability

Good quality local services promote social integration by addressing disparities in service levels which in turn promotes mixed income levels, with resultant economic benefits. Local access to public and other services is also a key aspect of functional integration. Social and economic sustainability are enhanced by accessible services which enhance opportunities and reduce costs. Physical integration of services and sharing of facilities contributes to their financial sustainability, while reducing the need to travel to access services contributes to environmental and economic sustainability.

Distances to facilities



Sustainable Community Planning is based on the household perspective. The focus is put on availability and accessibility of work, services and recreation within walking distance.

GLOSSARY

disparities

differences causing inequalities



Planning for basic services

Basic services should be provided from the start to all households at a uniform standard, while other services can be developed over time. Provision should be made for this in planning, based on distances and numbers of households per service. Some services require infrastructure and facilities that must be planned at the start, with involvement of relevant providers, for example, of bulk supplies of water and electricity. Planning, budgeting for and financing of service infrastructure requires technical and financial expertise and inter-departmental or agency collaboration.

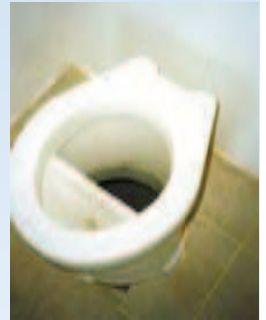
Engineering and financial considerations in structural framework plans, particularly for low income areas, need to be guided by sustainable community principles and a vision for the area generated by planners and other stakeholders. Integrated development planning by all stakeholders co-operating in multi-disciplinary teams is needed to plan appropriate service provision that considers qualitative as well as quantitative aspects.

Planning for water supply and sanitation needs to be based on agreement of appropriate systems and standards, taking into account environmental, social, technical, financial and maintenance considerations. An appropriate sanitation system for all households depends on access to sewage networks, local soil conditions and acceptability of alternative sanitation solutions. In areas without bulk infrastructure, dry systems, composting methods and local infiltration may be appropriate and cost-effective. Alternative solutions should be assessed in terms of environmental, social and health impacts, and beneficiaries need to be involved in such decisions.

Waterborne sanitation systems can be constructed to operate in more environmentally friendly and efficient ways, to conserve water, and reuse grey water at household and cluster levels.



Access to safe water



A urine diversion system (UDS) toilet does not require water for flushing or connection to a sewage network

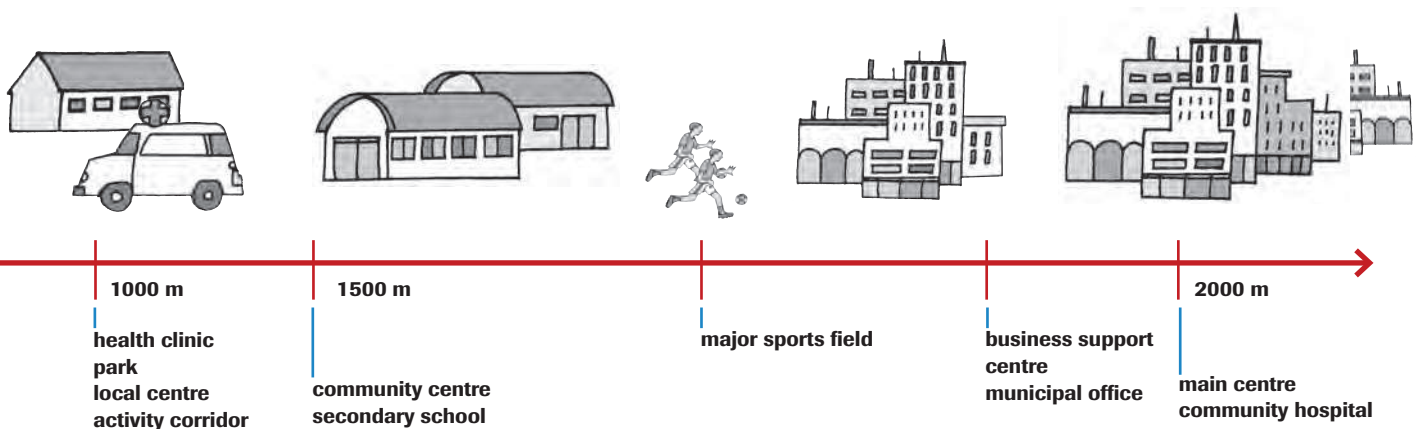
GLOSSARY

grey water

household water from sinks, basins and baths

local infiltration

disposal of wastewater into the surrounding soil



Talking SENSE

The Sustainable Energy Society of Namibia (SENSE) is an information network that promotes sustainable energy (solar, wind and bio-fuels) by raising awareness and lobbying government.

SENSE was established in 2005 and has more than 130 member organisations such as HRDC (Habitat Research and Development Centre), Desert Research Foundation (DRFN), Namibian Renewable Energy Programme (NAMREP) and the Renewable Energy and Energy Efficiency Bureau (R3E). Members include home-owners, eco-activists, professional consultants, suppliers, teachers and NGO's.

SENSE's work includes hosting public events on renewable energy issues and printing and distributing pamphlets and brochures. Topics include basic principles of solar heat-

ing, renewable energy sources and household energy efficiency.

Initiatives of SENSE members include:

- The Solar Revolving Fund assists low-income earners with low-interest loans to install solar water heaters.
- BEN (Bicycle Empowerment Namibia) imports, repairs and sells second-hand bicycles at low cost to poor people. They encourage municipalities to install cycle paths to make cycling safer.
- Solar Age is currently investigating the possibilities of a solar-diesel hybrid system for the Tsumkwe settlement.

Source: Maritz, Nina. 2006. Talking Sense – a Sustainable Energy Network for Civil Society. Paper presented at 2006 Sustainable Built Environment Conference, Bloemfontein, July 2006.) (Nina Maritz Architect, e-mail: nina@mweb.com.na)



VIP is a low cost type of sanitation

Basic Service Infrastructure

Municipalities must ensure that their citizens have at least the basic level of the following essential services

- Water supply
- Sanitation
- Roads and stormwater drainage
- Solid waste disposal
- Electricity

Municipalities can get Municipal Infrastructure Grant (MIG) capital funding for infrastructure.



Maintenance of stormwater drainage is important for the protection of roads

Options for technical services

Water supply options

- Communal standpipes
- Yard taps
- Yard tanks
- Roof tanks
- House connections

Sanitation options

- Ventilated Improved Pit Latrine (VIP)
- Ecological Sanitation – dry systems
- Low flow on site systems
- Septic tanks
- Water-borne sanitation

Roads and Stormwater options

- Access to erf with gravel road; earth ditch
- Narrow paved road; earth or concrete lined ditch
- Paved streets with kerbs; earth, concrete lined ditch or pipes

For further information, see "The Municipal Infrastructure Grant; Basic Level of Services and Unit Costs: A guide for municipalities", DPLG 2005



Electricity and telephones

Electricity is the optimal source of power due to its varied uses, but requires a network of power lines. Electricity provision is expensive, and cost recovery is facilitated by pre-paid meters. Electricity generation, mostly from coal in SA, is highly polluting, and sustainable community planning should aim for local renewable energy production from solar, wind and bio-gas sources, as environmentally beneficial and sustainable alternatives. This may influence the design and the capacity required for the power supply and should therefore be considered at an early stage of the planning process. Electricity saving is possible, particularly via solar water heating.

Electricity is needed in homes, and business and industrial areas require a high standard power supply. The network should be designed so that all households, premises and street lights are a reasonable distance from a connection point.

Telephones

Access to public telephones is essential in poor communities for safety and security and in emergencies and there should be a public phone within 500 metres of household.

Sustainable Energy

Oil, coal and gas are non-renewable and rapidly depleting energy sources that are the major cause of carbon dioxide (CO₂) emissions, global warming and climate change – the number one environmental threat. In SA most of our electricity is coal generated, and we are the 13th largest polluter globally. Sustainable Communities need to conserve energy and shift to renewable, non-polluting energy sources such as solar and wind.

Carbon Trading – getting paid to do the right thing!

The Clean Development Mechanism (CDM) is a United Nations mechanism set up to reduce CO₂ emissions. It allocates carbon pollution limits to countries on the basis of population, and enables developing countries which use less than their allocation to sell their carbon credits to developed countries that use more than their allocation, and have a CO₂ debit. The Department of Minerals and Energy approves CDM projects in SA, which enables them to seek funding partners via the CDM.

The Kuyasa Low-income Urban Housing Energy Upgrade Project

This City of Cape Town project in Khayelitsha provides solar water heaters, ceiling insulation and low-energy light bulbs to reduce electricity consumption and costs. It is the first CDM supported project in Africa, and is to be scaled up from the pilot of 10, to 2 300 houses. The project is 20 to 30% funded by the UK Department of Environment via the CDM, and by Department of Environmental Affairs and Tourism poverty alleviation funding.



Alternative and sustainable technologies are an absolute necessity – the technical solutions are available, we just need to create awareness and get them implemented.



Public phones should be located with easy access for pedestrians



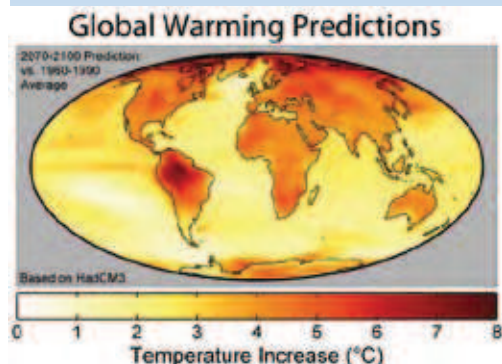
Alternative sources of energy need to be promoted and the use of such energy will in the long-term reduce costs and promote environmental sustainability

GLOSSARY

alternative and sustainable technologies

any technology that does less harm to the environment and uses renewal energy





www.worldpress.com



Global Warming, clean energy and energy conservation

Global Warming due to carbon dioxide emissions from burning of fossil fuels is likely to create a worldwide environmental crisis. Currently the bulk of cheap electricity in SA is generated by burning coal, producing significant CO₂ emissions.

South Africa thus needs to increase generation of sustainable energy from clean, renewable sources such as sun and wind, and the Government White Paper on Renewable Energy sets targets for the future contribution of renewable energy.

One solution can easily be implemented – heating water with solar power rather than electricity. Solar water heating is effective for households, commercial complexes and industry, and capital costs can be recovered from reduced electricity use well within the lifespan of systems. The technology is well developed and many products are already on the market. Increased local production of solar systems will also contribute to job creation and economic growth.

Another practical and low cost solution is energy conservation by using less energy for:

- heating and cooling of buildings (see box on good thermal design)
- minimizing motorised travel and transport
- low energy appliances and lighting

Everyone needs to become energy conscious and save on energy use, which will reduce personal and environmental costs, and the huge capital costs of additional generation capacity in the case of electricity.

Renewable energy initiatives in Nelson Mandela Bay

The Nelson Mandela Bay Municipality has, in line with the Energy White Paper and the Renewable Energy White Paper, embarked on a process to implement renewable energy technologies. Tenders invited national and international parties to submit proposals for the following renewable energy projects:

- *Solar water heating (SWH) project* – to install 100 000 SWH units over a six year period, with more than 60% for indigent and low-income households.
- *Wind energy* – to generate electricity from small and large wind turbines. A 15 megawatt wind farm is envisaged initially. Micro wind turbines for domestic households are also being considered.
- *Waste incineration and bio-digestion plant* – will convert effluent to a sludge which can be dried and burned, to drive an electrical generator. De-activated sludge could also be used for making bricks or to cap landfill sites.
- *Demand side management (DSM)* initiatives such as street light dimming, promotion and installation of energy saving devices, wastewater treatment plants and improved building efficiency measures
- *Land fill gas* – the installation of gas collection wells at two major land fill sites has the potential to generate sufficient methane gas to generate 3 to 4.7 MWe per annum, which justifies the cost of the equipment required.

Source: NMBM – Renewable Energy in a Municipal Context, November 2006

Checklist for Thermal Efficiency in Housing

Thermally efficient houses reduce energy use and financial and environmental costs. Better designs have huge impacts over the long-term (50+ years) occupation of houses.

✓ Site layout

- Site layout with long axis in East/West alignment
- House positions set out in township layout
- Adjacent houses allow solar access – staggering or sufficient North/South spacing for winter sun
- Options for house expansion indicated on township layout

This enables optimal orientation of houses (North/North East). Solar access/minimum shading.

✓ Housing form

- Multi-storey rather than single storey
- Row housing rather than detached houses

This enables better thermal performance, higher comfort levels and lower materials and energy costs.

✓ House orientation

- Long axis of the house oriented essentially North/North East (15° West to 45° East)
- Cold wind side of the house minimised

This enables optimal solar thermal positioning and minimum wind and rain exposure.

✓ Windows and roof overhangs

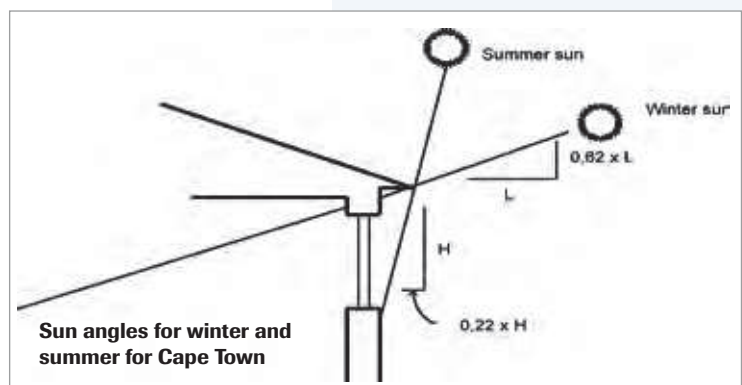
- Windows (taller rather than wider) on four elevations of the house – 5% of floor area on North, 2% on East and 0,5% on South and West
- Roof overhangs to allow sun through windows in winter, but shade in summer.

This ensures optimal natural lighting, minimises heat losses, enables solar heating in winter and avoids solar heating in summer.

✓ Thermal insulation

- Ceiling installed to minimise heat gain/loss through the roof

Costs: R75/m² or R2250/30 m²



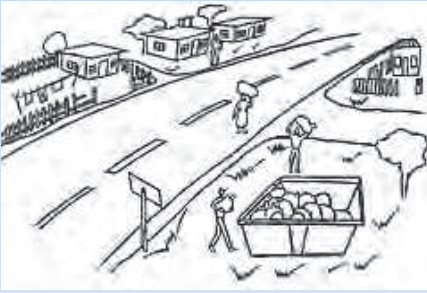
References

Glynn Morris, AGAMA Energy (pty) Ltd.

GLOSSARY

thermal

relating to heat



Option 1: People transfer waste from their houses to communal skips, and the waste in the skips is transported to a formal disposal site. This is the cheapest option available, but also the most problematic. If the communal skip is too far away, not emptied regularly, or if children cannot reach high enough to place garbage in it, the collection point becomes a littered and unhygienic health hazard.



Option 2: The people place their waste in plastic bags or bins, which are placed outside houses on the kerbside once a week. Waste collection vehicles travel a fixed route, collecting this waste and taking it directly to the disposal site. This is the most expensive option, costing approximately 55% more than Option 1, as it requires specialised vehicles. This system is suitable where access to individual households is possible, via well maintained roads.

Factors to be considered before selecting a specific system

- Social – the needs of the community, e.g. job creation, acceptability
- Political – local policy and statutory requirements
- Financial – available capital, ability of the community to pay
- Technical – waste types generated, availability of suitable equipment
- Environmental – local climate, potential effect on groundwater resources

Waste removal

Service levels are classified as follows

- Basic service – communal collection point
- Full service – kerbside collection

The target is for all households to have kerbside refuse collection. For households to receive an adequate, equitable and affordable waste collection service, the following should be planned in a sustainable community:

- Roads wide enough for refuse trucks
- Culs-de-sac wide enough for trucks to enter and turn
- One easily accessible refuse transfer site per 3000 residential sites, for disposal of garden refuse and bulky waste that does not fit in black bags or wheely bins.
- Recycling at transfer stations via containers for different types of waste
- Education and information on recycling at transfer stations

Waste minimisation

The amount of waste going to landfills should be reduced by

- Minimisation of waste at source
- Waste separation and recycling at source
- Reuse and repair (e.g. via buy-back centres)
- Composting and taking organic waste out of the waste stream
- Green procurement – using products and services that involve minimum waste generation in production and that use eco-friendly, bio-degradable materials

Community education, awareness and responsibility are essential for waste minimisation, and urban agriculture creates local opportunities for composting of organic waste.





Sign at collection bins, Delta Park, Johannesburg

Who are the experts on waste management in Southern Africa?

The Institute of Waste Management of Southern Africa promotes sound and cost-effective waste management to ensure that all waste is handled in a way that protects the environment. The members come from all sectors of the waste management industry and include waste managers, contractors, academics, consultants and students.

website: www.iwmsa.co.za



When we throw a product away it represents more than just a piece of waste, it also embodies all the resources used to produce it. If you add these up, the real weight of a toothbrush becomes 1.5 kg and that of a cellphone becomes 75 kg.

Margot Wallström
EU Commissioner

Waste should be managed from the point of generation to the point of disposal, through control of the following:

Waste avoidance	Prevent the creation of waste in the first place
Waste minimisation	Reduce! Reduce! Reduce volumes by reusing, sorting and recycling
On-site storage	How and where waste is stored when it is first generated
Collection	How waste is picked up
Transport and transfer	How waste is moved
Processing and recovery	How waste is treated or made useful
Disposal	How waste is finally discarded

Community Zero Waste Project

The Community Zero Waste Project in Johannesburg is designed to show how reclamation works, while making people aware of the need for Clean Production. It includes organic gardening and crafts as well as developing understanding of using water and energy efficiently. Project activities are introduced as neighbourhood programmes. The programmes in turn promote environment protection and economic development in the community.

Useful Zero Waste tips

- Separate organics from reusables/recyclables
- Start a compost heap for organic waste
- Donate or sell reusables/recyclables
- Use energy-saving compact fluorescent light bulbs
- Use a kettle and not the stove to boil water
- Switch your geyser off during the day
- Use a bowl or buckets to rinse things, rather than running water
- Use a broom not a hose to clean paving
- Water the garden in the afternoon 15:00 or in the morning before 10:00

Source: Brochure on Community Zero Waste Project by Johannesburg branch of Earthlife Africa



GLOSSARY

clean production

the production of goods and services processing less waste, or none at all, and that do not use toxic man-made chemicals

green procurement

using products and services that create minimum waste and pollution in production and that use eco-friendly, biodegradable materials





Pre-primary and primary schools should be located within housing areas and neighbourhood units. It should be possible for a child to walk from home to school along a convenient and safe walkway.

Sport fields and community gardens can be part of a school yard



Education

Education is a provincial responsibility, but municipalities need to make sufficient land available.

Primary schools are often a determining factor for the design and size of neighbourhoods. The Department of Education standard for primary schools is 40 students per class, resulting ideally in primary schools of 700 to 800 students. It is preferable for learners to attend schools in local neighbourhoods to minimise travel and traffic. A primary school serving 3000–4000 inhabitants can be within a 10 minute or 600–800 m walking distance, along convenient, safe and lit pedestrian walkways and cycle paths.

Secondary schools ideally accommodate students at a rate of one secondary school for three primary schools, or 1800–2000 students. Sport and recreation facilities can be shared with other schools and organisations. They should be within 1200 m, and serve a population of 10000–15000.

Pre-primary schools, crèches and day-care centres should be located in residential areas or adjacent to primary schools, away from main roads or business zones, and have safe and convenient pedestrian access. They should be small scale, serve the immediate neighbourhood within 300–500 m, and have access to a garden. A medium-cost residential housing unit of 500–600 m² is suitable, and conducive to a homely environment.

Adult education and other community activities can use school premises after hours, and schools as community learning centres with a mix of uses to maximise use of local infrastructure.



Health

Neighbourhood clinics provide preventive and primary care, larger clinics and day hospitals provide intermediate services, while hospitals provide advanced medical care. Guidelines for provision are:

- *Health posts* and *mobile clinics* available on certain days or for limited hours, within 500 m, adjacent to primary schools, marketplaces or local centres.
- *Health clinics* serving 10000–15000 inhabitants within 1200 m, accessible on foot or local public transport.
- *Day and community hospitals* serve population of 65000–110000

Special health care needs will arise due to increasing numbers of HIV/AIDS affected people. Home-based care can be provided by home or clinic based community health workers. Health services should include preventative health education and monitoring of environmental health risks to reduce illness and its costs. Safety and security, social and traffic control measures that reduce violence and injury are also essential preventative measures.

Social services

Social services cover a great number of services and facilities required in a community area. They involve many different actors and authorities. Some of the social services are possible to co-ordinate and physically integrate in single or 'one-stop' facilities at local commercial or community centres, preferably within 1000–2000 m. These include:

- social services (welfare grants payment and social workers)
- post office
- libraries
- fire and emergency services
- police services

Children's special needs would be part of the social services. The most disadvantaged and vulnerable children may need special services in the form of children's homes, orphan care, foster homes or other institutional arrangements.



Different health services meet different needs. While preventive health care is available close to home at clinics, more advanced treatment is provided at a main community hospital.

Environmental health issues

SCUs with higher densities, mixed use areas and urban agriculture require planners to pay special attention to environmental health issues such as:

- air and noise pollution
- traffic congestion
- alternative sanitation and waste water systems that are not properly selected or designed
- health risks posed by keeping animals and poorly made compost
- poor waste management practices and services
- cellphone masts and high voltage power lines close to houses or schools

Many municipalities employ Environmental Health Officers to deal with environmental health issues.



Social welfare services for special needs groups such as HIV/AIDS affected persons and orphaned children should be available at small-scale facilities with a homely environment



Neighbourhood Watch

Community policing involves a working partnership between the police and the community to prevent crime, arrest offenders, find solutions to recurring problems and to enhance safety and security. This partnership should ensure that the lives, property and rights of all citizens are protected and respected, and that the police service is efficient, but based on proper procedures and respect for the rights of accused persons.

Source:

Pakiso Sylvester Rakgoadi, Community Policing and Governance. Research report written for the Centre for the Study of Violence and Reconciliation, July 1995

Community Policing Forums (CPF's) should be established to facilitate co-operation between the police, the community in general and specific groups such as neighbourhood watches. CPF's should provide clear guidelines on the roles and acceptable practices of community members and groups, so that they do not 'take the law into their own hands'.

Safety and security

Poorer communities are more vulnerable to crime and disasters such as fires and flooding, and adequate police, fire and emergency services are essential. They require a local presence to minimise response times, and easy road access to areas. Inhabitants need clear lines of communication and local liaison. Police should establish their mode of operation in consultation with community policing forums.

Neighbourhood designs should minimise safety and security risks, including those posed by traffic to pedestrians, cyclists and children.

Cultural facilities and community meeting places

Local cultural activities, entertainment and celebrations build community identity, local culture and social cohesion. As cultural activities and interaction between groups and individuals act as the "glue" of the community, they are an important part of sustainable development. Cultural facilities and community meeting places are needed and municipalities can support cultural services provided by NGOs, CBOs, and religious congregations by allocating land and spaces for hire in community centres. The number, size and location of sites in layout plans will depend on community needs and should be based on consultation. Local parks can also be used.

Community halls and centres should be multi-purpose spaces to provide for diverse activities. Larger community centres can include other facilities and services. Local halls should serve 10000–20000 people within 1 km, but could be integrated or co-located with schools. Multi-functional community centres can serve a population of 25000–40000 people within 1.5 km.

Public open spaces, parks and sports fields can also be used for cultural activities and meetings. Abakwetha or initiation is an important tradition in some communities that requires an isolated space in a natural environment. Community representatives should be involved in the identification of suitable sites for Abakwetha and should play a role in maintaining and protecting it.

Municipal offices

Municipal offices should provide for:

- public information and contact
- payment of bills
- provision of maintenance
- monitoring and control
- guidelines, advice and assistance regarding planning and building regulations and services
- housing support services
- support for community initiatives and projects

Municipal offices are preferably located at social service, business or community centres, near public transport and within 2 km of any household.

Community support centre

Municipal offices at a community centre providing services to the community



The Community Self Employment Centre (COMSEC)

COMSEC, the key project of the Eastern Cape Job Creation Trust, supports entrepreneurship development and self-employment.

COMSEC provides the following services

Business development services

- Business plans
- Marketing plans
- Business skills training
- Accounting services
- Business registrations
- Facilitation of market access
- Business out-reach programme

Consulting

- Replication of COMSEC model
- Facilitation of SETA contracts
- Umsobomvu Youth Fund Voucher Programme allocating agent

Property

- Small business office and workshop space
- Incubation

www.comsecpe.co.za



Commercial services

In the Sustainable Community Unit, which focuses on accessibility and availability of services to pedestrians as a main aim, small and more dispersed commercial services will be available.

The most directly accessible commercial services will be provided as corner shops, neighbourhood centres and local commercial centres. At the housing area level there will be corner shops, informal outlets, market stalls, hawkers and business vendors. These shops may be situated within residential areas, near public transport routes or main pedestrian walkways.

GLOSSARY

incubation

start-up support for a small business

replication

repeating the same activity elsewhere





Residents should find most daily consumer goods at the local corner shop

The central nodes and activity corridors should include not only shops and businesses but social, community and municipal services.

Characteristics of green public open spaces

Green public open spaces should

- include larger parks to encourage ball games, centrally located and within 500 m,
- include areas with trees, lawns and pathways
- be fenced for child safety if adjacent to roads
- have bollards to prevent vehicle access
- combine flat areas for ball games and uneven natural areas
- not include servitudes or retention ponds
- have robust and relatively maintenance free sports field and playground equipment that is designed for safe use
- include surfaced public open spaces with trees and places for people to sit, meet and trade

GLOSSARY

hierarchy

a system with higher and lower levels

Within a walking distance of 800 metres there should be a neighbourhood commercial centre with daily consumer goods as well as specialised shops for other goods. At a higher level in the hierarchy there should be a local commercial centre serving a number of neighbourhoods with a walking distance of 1200 metres.

The community commercial centre serves an entire community unit or in some cases even two neighbouring communities. It is intended that the maximum walking distance to such a centre would be 2 km, allowing a travelling time on foot of 30 minutes. Such a centre should include daily consumer goods, specialised goods and services, a marketplace, business support centre, municipal support services, health, professional and financial services.



Recreational facilities and open space

Recreational and sport activities require access to suitable local open spaces and facilities. This should include:

- private space next to houses
- semi-private space adjacent to houses
- local open space within or close to a cluster of houses
- larger spaces and sports facilities at neighbourhood and area level

Local open spaces need to be safe, allowing for surveillance and social control via easy access and/or enclosure.

Playgrounds are needed close to home and family, where parents can watch children play, safe from traffic. Children of primary school age can move beyond housing clusters to neighbourhood playgrounds within 500 m with more facilities and space, accessible on foot and without crossing major roads or transport routes.



Sports fields and facilities for sports preferred by the community are needed at neighbourhood level. Sports fields with free access can be controlled and maintained by communities. Co-location with schools and community halls is preferable. Sports requiring special facilities and equipment can be located at community centres. Sport clubs and the private sector can finance and manage such facilities and charge an entrance or membership fee.

Parks and public gardens are important components in the urban structure for aesthetic and environmental reasons. Neighbourhood parks should be within 500 m, and larger community parks within 2 km. Management and maintenance by the municipality can include community involvement.

Major open spaces are extremely valuable for a quality urban environment. A Metropolitan Open Space System (MOSS) with linked green open spaces promotes environmental protection, biodiversity and conservation of unique species. Open spaces also provide for recreation such as picnics, hiking, cross-country running, swimming and climbing, as well as environmental education and Abakwetha. Sites should be available for specific activities, with due control to protect the environment, as well as access from community areas and community involvement in environmental protection.



Convenient access to major open space is important for the quality of living



In the sustainable community unit there will be a hierarchy of public open spaces that are interlinked and easily accessible from housing clusters through a network of walkways. The elements of public open space include playgrounds, meeting places, playing fields, squares, parks, gardens and natural green areas.

GLOSSARY

aesthetic

concerning beauty

biodiversity

variety of species of plants and animals

conservation

protection

Environmental Impact Assessment

a legally required study to determine and to prevent or reduce potential harmful effects of a development project on the environment

Cemeteries should be designed to provide a pleasant environment, seating, shade trees and decorative plants.



Cemeteries

The need to reserve land for cemeteries is an issue to be addressed at the Spatial Development Framework level, due to the increasing demand and the specific requirements related to the land use. Ideally each sustainable community area should have sufficient land for cemeteries that is reasonably accessible.

In determining the location of cemeteries the soil conditions, vegetation, ground water and storm water drainage must be taken into account. The landscaping and layout of the cemetery should be based on the need to create a pleasant and restful environment.

The planning process will include an Environmental Impact Assessment.





Characteristics of cemeteries

- Sites for cemeteries must be identified and planned at SDF level as suitable areas are in high demand for other developments
- Sites should ideally be large to minimise infrastructure repetition, but reasonably accessible from community areas
- Soils should be stable but enable excavation
- Sites should be positioned considering drainage and ground water resources
- An Environmental Impact Assessment is necessary
- Cemeteries should have trees and grass that can be mowed
- Sites should be fenced
- Alternatives to burial should be encouraged

GLOSSARY

MOSS

Metropolitan Open Space System

floristic region

region with specific types of plants

biomes

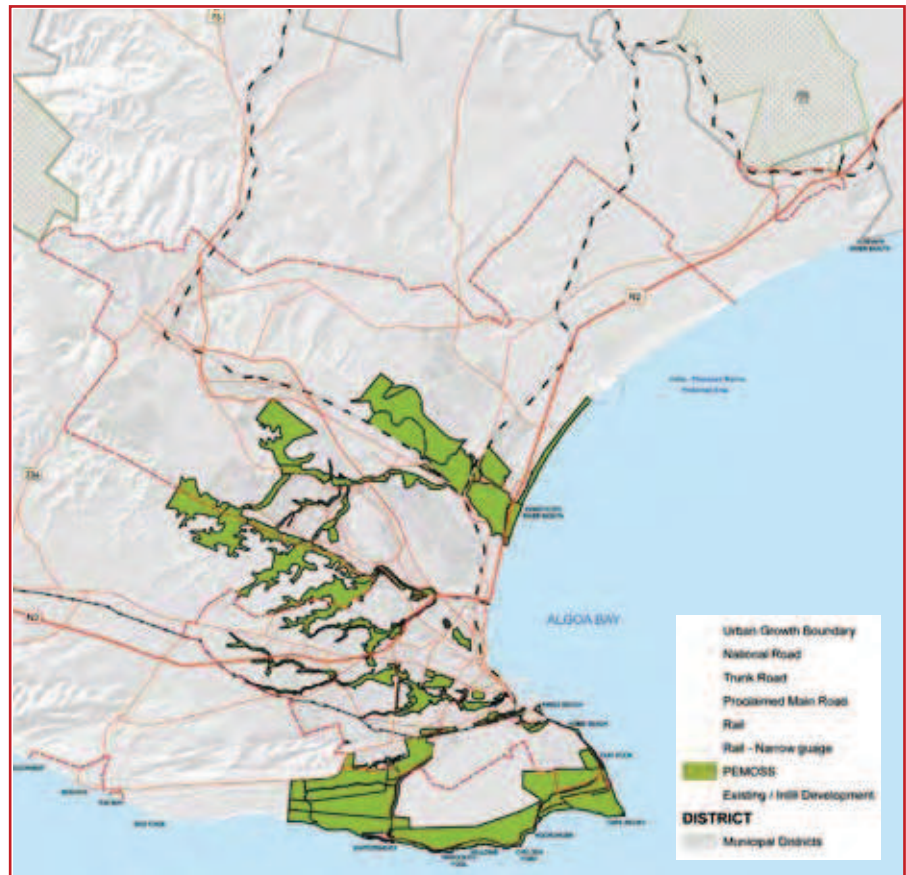
areas with specific natural vegetation

biodiversity hotspots

areas with unique and endangered species of animals and plants

verge

area between the road and the erf boundary/sidewalk/pavement



NMBM Spatial Development Framework, 2006

Metropolitan Open Space System

Due to the long coastline with a number of rivers and ridges, the metropolitan area has a unique environmental quality. The diversity and unique plants also provide opportunities for tourism and conservation.

This is further enhanced by the metropolitan area being situated at the south-eastern corner of the Cape Floristic Region where five of South Africa's seven natural biomes (Fynbos, Subtropical Thicket, Forest, Nama Karoo and Grassland biomes) converge. Such a concentration of biomes, particularly within a city, is unparalleled in the world. The metropolitan area also contains three of the 21 international biodiversity hotspots, thus making it extremely valuable from a scientific and eco-tourism perspective.

Incorporation of the MOSS concept in the Bloemendal pilot project





SERVICES checklist

How do planning principles apply to services?

Principles	Applications	Results
Poverty alleviation – meeting basic needs	• Appropriate norms and standards for services: • Water and sanitation • Roads and walkways/ bicycle routes • Waste removal • Electricity, telephone/internet – access to information • Health services • Education/cultural services • Policing • Social and welfare services • Commercial services • Informal/formal trading spaces	• Improved living standards • Service availability • Increased household income
Focus on special needs groups – HIV/AIDS affected persons, children, the aged, disabled	• Water and sanitation crucial • Home-based and community food gardens • Health care services and clinics • Availability of/access to social and welfare services • Mobility (accessibility) • Wheel chair friendly (universally accessible) • Community based education	• Provision for basic needs • Improved living standards • Service availability • Increased household income
Gender equality	• Increased access to services and facilities • Increase participation	• Shorter walking distances • Safer environment • Women empowerment
The environment – physical, social, economic	• Energy – alternative/renewable sources • Alternative sanitation options • Use of grey water • Communal waste collection points • Waste separation and recycling • Spaces where people can meet • Playgrounds • Local open space • Cemeteries • Abakhwetha	• Energy conservation • Social interaction • Economic opportunities • Cultural activities
Participation and democratic processes	• Community involvement in design, development and maintenance of services • Community based activities/service provision	• Community buy-in, sense of identity
Local economic development	• Waste removal – community based waste separation • Environmental care, e.g. clean-up campaigns, tree planting, seed collecting • Telephone/Internet – kiosks • Health services – home-based care • Educational services – Adult Basic Education – skills enhancement • Policing – community policing • Social and welfare services • Home-based care • Commercial services – home-based economic opportunities • ATMs • Informal kiosks • Labour intensive service installation (Expanded Public Works Programme)	• Poverty alleviation, more diverse environment and sustainability
Accessibility – public transport and pedestrians	• More accessible services and less need to travel • Proximity of services • Proper layout planning • Pedestrian movement routes and side walks • Cycle paths	• Cost-efficient mobility • Time saved
Mixed-use development	• Clustering of services • Permitting mixed use in terms of services • Informal kiosks	• Accessibility, diverse urban environment, cost-efficiency • Co-operatives and community projects
Corridor development	• Clustering services • Alignment of service provision	• Cost-efficiency, increased accessibility • Economic viability
Safety and security	• Structures/facilities for community policing • Safe design for access to services • Plan for crime reduction • Create sense of safety through design • Street lighting along main routes, walkways and cycle paths	• More attractive areas • Accessible, safe areas
Variation and flexibility	• Flexibility in standards • Design for mix-used development	• More diverse and attractive environment • Integrated city • Flexible standards
Densification	• Clustering of services	• Lower service costs, increased access • Efficiency
Reducing urban sprawl	• Densify development • Clustering of services	• Cost-effective, optimal use of infrastructure

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.

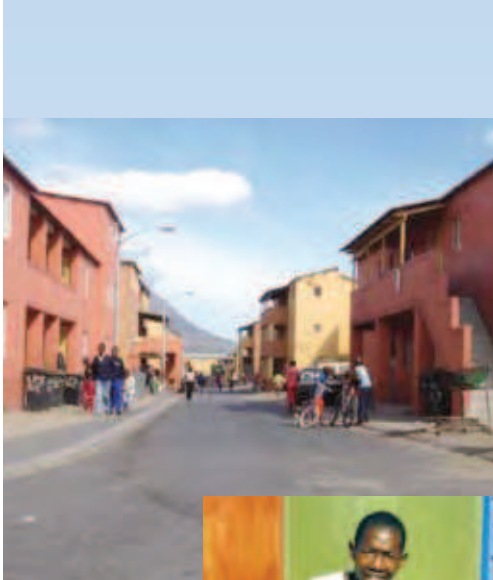
A network of pedestrian walkways is an essential structural component, connecting housing clusters, primary schools, neighbourhood centres, employment areas, community service centres, transport nodes and recreation environments. Walkways should be designed for the needs and safety of children, the disabled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

Pedestrian and cycle routes should be prioritised and accessible to all



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.

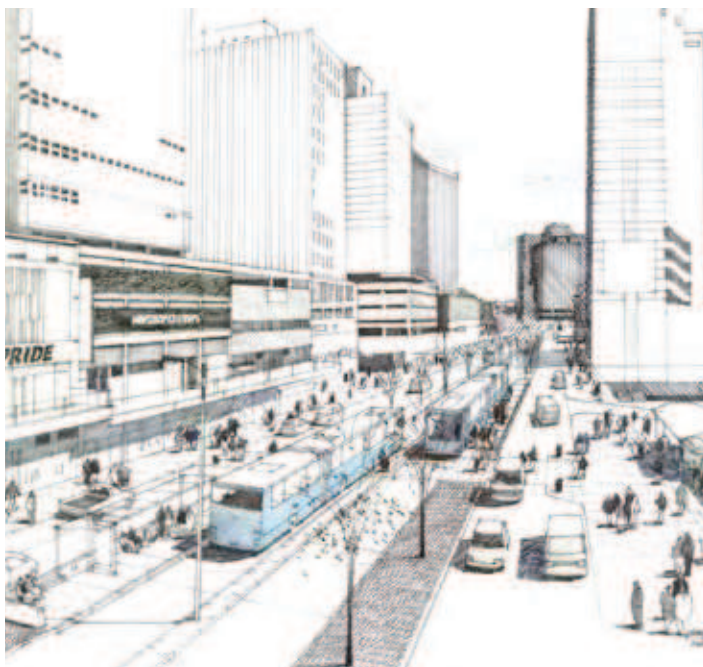
As a guide, the maximum walking distance from any house to a bus stop should be 400 m.

»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



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 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
Poverty alleviation – meeting basic needs	• Accessibility to job opportunities and services • Efficient public transport • Subsidised public transport	• Reduced travelling cost, more choice and opportunities
Focus on special needs groups – HIV/AIDS affected persons, children, the aged and people with disabilities	• Wheel chair friendly (universally access)	• Increased accessibility and mobility
Gender equality	• Provide safe pedestrian access • Safe public transport • Safe and convenient access	• Improved transport = improved accessibility
The environment – physical, social, economic	• Mode of transport must be environmental friendly/sustainable • Promote public transport, walking and cycling	• Reduced pollution, and costs • Walking and cycling improve health
Participation and democratic processes	• Consultation on input and design	• Meeting needs and priorities • A sense of responsibility
Local economic development	• Applications of transport • Local economic development initiatives in transport	• Access to markets • Location to facilitate accessibility
Accessibility – public transport and pedestrians	• Plan movement networks for ease of access	• Things are more accessible for everyone
Mixed use development	• Appropriate mobility network around and in mixed-use areas • Co-ordination of land use and transport planning	• Reduced amount of travelling
Corridor development	• Increase densities • Trunk buses along corridors	• More efficient public transport
Safety and security	• Prioritise pedestrian movement • Areas designed for surveillance • Safety of vehicles, speed bumps, traffic calming zones, pedestrian crossings • Increase law enforcement • Feeling of security	• Safety and safe public transport
Variation and flexibility	• Provide for different modes of transport • Integration of different modes of transport	• More efficient transport • Linkages between different modes of transport
Densification	• Multi-story development along corridors • Mixed use and zoning flexibility	• Reduced travelling • More efficient public transport
Reducing urban sprawl	• Increase density • Public transport routes linking higher density areas, nodes, centres and employment zones	• More efficient public transport • Cost efficient transport



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
Poverty alleviation – meeting basic needs	• Combine meeting places with LED • Multi-purpose spaces and centres	• Knowledge/skills transfer/sense of belonging
Focus on special needs groups – HIV/AIDS affected persons, children, the aged and people with disabilities	• Community support centres • Easily accessible parks • Multi-purpose centres	• Integration and acceptance in the community
Gender equality	• Accessibility to facilities, e.g. clinics • Formal/informal meeting places	• Empowerment of women
The environment – physical, social, economic	• Community participates in maintaining the public environment	• Cost effective use of resources • Beautiful and cared for environment • Ownership
Participation and democratic processes	• Opportunities for meeting places, • Promote public participation and consultation	• Improved implementation of projects • Sustained community responsibility
Local economic development	• Home-based activities • Opportunities for local markets/entrepreneurs • Production and trading opportunities	• Economic upliftment • Safer working environment
Accessibility – public transport and pedestrians	• Safe and pleasant pedestrian walkways, cycle paths, bus stops etc. • Paving and lighting	• Improved pedestrian safety • Increased mobility
Mixed-use development	• Building design and access to accommodate mixed-use development • Providing options	• Accessibility • Transport cost saving
Corridor development	• Better accessibility • Improved mixed-use development • Location for community development/multi-purpose centres	• Improved public transport • Safer public environment
Safety and security	• Layout facilitating surveillance • Natural surveillance – use natural topography, landmarks, etc to create more character	• Improved safety and security • Fewer fences
Variation and flexibility	• Community participation in planning	• Different needs of the community are met • Increased awareness
Densification	• Provide for different needs and groups • Corridor development	• Greater interaction • More compact social structures
Reducing urban sprawl	• Centralise services and provide better and bigger range	• Enhanced economic base and social interaction

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.



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



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?

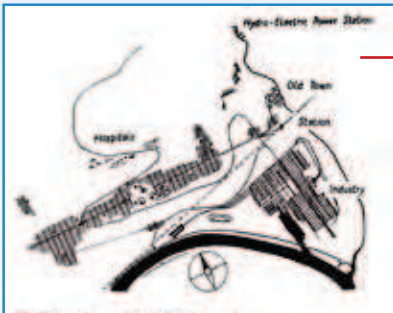


Principles	Applications	Results
Poverty alleviation – meeting basic needs	• Provision of basic services	• Sense of dignity
Focus on special needs groups – HIV/AIDS affected persons, children, the aged and people with disabilities	• Provide parks for children, wheelchair friendly pavements, walls for art and craft areas	• More colourful and accessible areas
Gender equality	• Provide meeting place such as squares and parks	• Safe areas where the community can participate and have a sense of place
The natural (physical/green) environment	• Street furniture, parks, landmarks and swimming pools, greening, tree planting	• Leisure, recreation and social cohesion
Participation and democratic processes	• Involve all generations, ages and cultures	• Ownership and sense of place
Local economic development	• Create work opportunities by ear-marking areas for unique development	• Investment and work opportunities
Accessibility – public transport and pedestrians	• Use different materials on different surfaces, wheelchair friendly pathways and specific street furniture, cycle paths, walkways, pedestrian crossings	• Safe flow of people and vehicles
Mixed-use development	• Buildings designed with specific themes, housing blocks and market-places with themes	• Sense of place
Corridor development	• As above	• As above
Safety and security	• Cameras, pedestrian crossings and proper lighting	• Safe environment, reduced crime
Variation and flexibility	• Using different materials and apply themes	• Sense of ownership • Interesting and beautiful environments
Densification	• Urban designs with proper controls, use of materials on buildings	• Liveable areas, • Orderly, neat, compact SCU's • An aesthetically pleasing urban environment
Reducing urban sprawl	• Densified development • Improve public transport	• Sustainable environment • More efficient and effective cities



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



3.7 Urban Planning Structure

Urban areas develop over a long time and additions and renewal of the structure are based on visions and trends. The reality of urban development seldom follows a prescribed pattern and the passing of time and contemporary principles are reflected in the urban structure. This creates a dynamic and interesting city and living environment. The theoretical models for urban structure are used for analytical studies and for inspiration in the plan preparation process.

The most common models are the nodal structure and the linear development structure. These can then be combined in different variations that create complex models.

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.

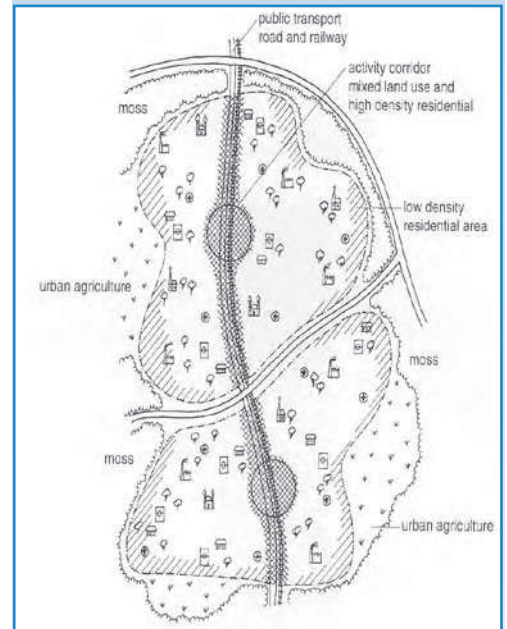
Neighbourhood units are often based on the catchment area for a primary school, with a clinic, local shops and recreational facilities at a maximum walking distance of 800–1000 m. Three or four neighbourhood units may support a local commercial centre, secondary school and community centre.

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.

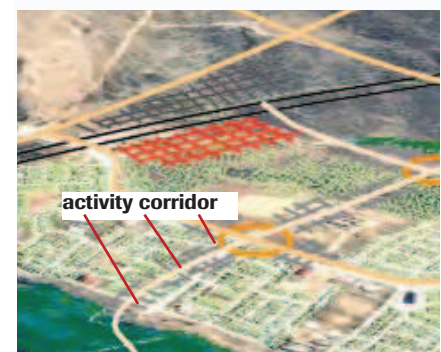
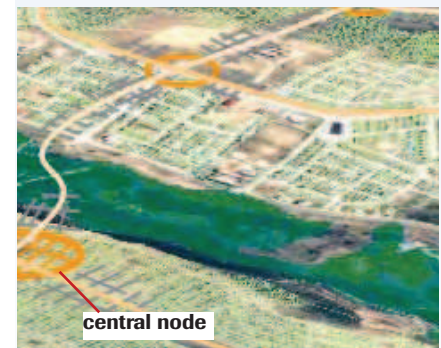


Schematic illustration of a Sustainable Community Unit

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.

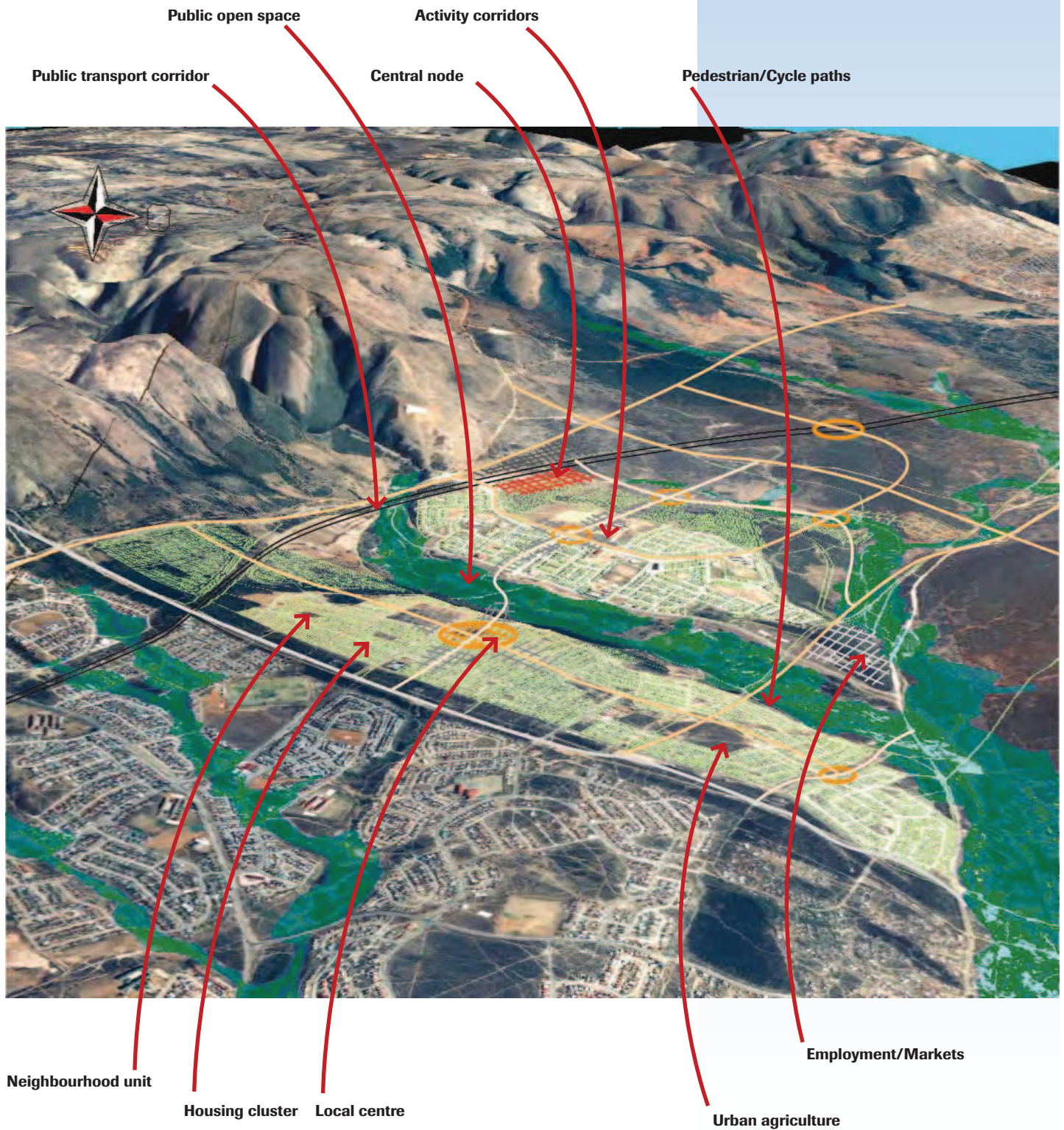
Public open space

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

