The Neighbourhood
Planning and Design Guide

Creating Sustainable Human Settlements

Red Book

Part I

Setting the scene

Feedback and comments on this Guide would be welcome. It will assist the Department of Human Settlements in adapting and updating the document, ensuring that it remains useful and relevant. For feedback, or to request more information, please make use of the contact details below.

Contact details

Address
The Department of Human Settlements
Private bag X644
Pretoria
0001

Call centre
0800 146873

E-mail
redbook@dhs.gov.za

Website
www.dhs.gov.za

human settlements
Department:
Human Settlements
REPUBLIC OF SOUTH AFRICA

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Preamble

Introduction

The Neighbourhood Planning and Design Guide is a comprehensively updated and revised version of its predecessor, the *Guidelines for Human Settlement Planning and Design*, commonly known as the *Red Book*. The Red Book, published in 2000, was preceded by a series of guideline documents aimed at improving the quality of settlement planning and design.

Historical background

Recognising that the cost of engineering infrastructure and services contributes significantly to the overall cost of housing, the Council for Scientific and Industrial Research (CSIR) published the *Guidelines for the Provision of Engineering Services in Residential Townships (Blue Book)* in 1983. This was followed by the publication of *Towards Guidelines for Services and Amenities in Developing Communities (Green Book)* in 1988. The intention was to optimise the provision of engineering infrastructure and services by ensuring that they are of sound quality and also acceptable (both financially and technologically) to the recipient communities. The *Guidelines for the Provision of Engineering Services and Amenities in Residential Township Development* was published next. It was completed in 1992, but, due to the historical political changes in the country at the time, it was only published in 1994. The publication became known as the *Red Book* because of the colour of its ring binder, as was the case with the *Blue Book* and the *Green Book*.

The effect of layout planning on the cost of providing engineering infrastructure and services became increasingly evident, and the guidelines evolved over time to acknowledge this. Subsequent to the publication of the first *Red Book* in 1994, South Africa experienced significant societal changes that resulted in a new set of human settlement planning and design challenges and opportunities. It became evident that the guidelines may have to be expanded to enhance its contribution to the development of sustainable and vibrant human settlements, as opposed to mere serviced townships. This necessitated the development of the second *Red Book*. The CSIR was commissioned by the (then) National Housing Board to coordinate the development of the document, and it was published in 2000. It was titled *Guidelines for Human Settlement Planning and Design*, which reflected a more integrated, holistic approach to settlement planning and design.

The 2000 version of the *Red Book* was the result of a collaborative effort by several government departments under the auspices of the (then) Department of Housing. Mutual concern for the quality of the built environment and the country's natural resources, as well as a common recognition of the role that human settlement planning and the provision of engineering services plays in its protection or destruction, was the catalyst for this multi-departmental cooperation.

The need for the guidelines to be revised and updated

The understanding of human settlements has evolved significantly internationally and locally during the past two decades. This, together with substantial shifts in priorities and values, prompted the Department of Human Settlements (DHS) to embark on a process to revise and update the 2000 *Red Book*. The intention was to develop a document that would give guidance on local responses to global challenges, especially climate change and its relation to the built environment, and to bring the theoretical approaches to settlement making in line with the latest research and current thinking as reflected in various government policies, programmes, frameworks and strategies.

Furthermore, technologies and processes developed in recent years needed to be incorporated into the guidelines, while the challenges facing South African society needed to be acknowledged and the opportunities highlighted.

The process to develop a new Guide

The DHS embarked on an extensive and inclusive process to produce a document that would provide practical neighbourhood planning and design guidance and contribute to the development of settlements that are vibrant, safe, integrated and inclusive. The CSIR, as the custodian of the Red Book, was responsible for the management of the process, the coordination of the various contributors, and the preparation of the final document.

The process to develop a new Guide involved an extensive consultation process, a range of assessments and studies, and the preparation of content by numerous specialists supported by various reviewers. The consultation process included semi-structured interviews with a wide range of role players including officials from relevant government departments and entities, municipal officials and councillors, academics, researchers, community-based organisations, non-government organisations, and private sector built environment professionals (e.g. engineers, urban designers, urban planners, architects and landscape architects).

A Project Steering Committee (PSC) was established to provide strategic guidance with respect to the approach to settlement planning, design and development that the Red Book should be advocating. It also played an advisory role regarding the philosophy and principles that should underpin the guidelines, as well as current and envisaged policy directions. The PSC comprised of individuals with appropriate experience representing a range of stakeholders, including the DHS and its entities, key government departments, civil society, the CSIR and councils for the various built environment professions.

Teams of specialists from the CSIR and various other organisations were assembled to prepare the content of the document. The different sections required teams with expertise in the fields of, amongst others, urban planning and design, architecture, landscape architecture and engineering. Each writing team was supported by a domain-specific Thematic Reference Group (TRG). The TRGs supported the authors by providing direction with respect to the information and guidance to be included in the different sections. They also had to ensure that the technical content is accurate and appropriate. The TRGs consisted of domain specialists from, for instance, relevant government departments, built environment practitioners, and recognised academics and researchers.

MJ TSHANGANA
DIRECTOR GENERAL: DEPARTMENT OF HUMAN SETTLEMENTS
DATE: 04/12/2018

Acknowledgements

Project Steering Committee

Joseph Leshabane	Department of Human Settlements
Neville Chainee	Department of Human Settlements
Aubrey Matshego	Department of Human Settlements
Anton Arendse	Estate Agency Affairs Board (EAAB)
Diane Arvanitakis	South African Council for the Architectural Profession (SACAP)
Karishma Busgeeth	Housing Development Agency
Nonhlanhla Buthelezi	Department of Human Settlements
Stefanie Chetty	Department of Rural Development and Land Reform
Nandi Dube	Department of Water and Sanitation
Sabelo Duma	Department of Transport
Johan Goosen	South African Council for the Landscape Architectural Profession (SACLAP)
Sifiso Hlatswayo	Department of Rural Development and Land Reform
Thandeka Kabeni	Department of Cooperative Governance and Traditional Affairs
Tinus Kruger	CSIR
Abena Kwayisi	Department of Rural Development and Land Reform
Martin Lewis	South African Council for Planners (SACPLAN)
Themba Mabaso	Federation for the Urban Poor (FEDUP)
Musa Maluleke	National Home Builders Registration Council (NHBRC)
Motebang Matsela	Community Organisation Resource Centre (CORC)
Bekubuhle Mbentse	Department of Water and Sanitation
Hayley McKuur	Department of Human Settlements
Nana Mhlongo	Council for the Built Environment
Cindy Mlangeni	Federation for the Urban Poor (FEDUP)
Simon Moganetsi	Department of Environmental Affairs
Alfred Mocheko	Department of Environmental Affairs
Lebogang Mojanaga	Department of Energy
Mpofu Mthokozisi	Department of Energy
Ngodiseni Musetha	Department of Rural Development and Land Reform
Sizwe Mxobo	Community Organisation Resource Centre (CORC)
Dr Mark Napier	CSIR
Elsie Neluvhalani	Department of Transport
Eamonn O'Rourke	South African Council for the Landscape Architectural Profession (SACLAP)
Christine Platt	Commonwealth Association of Planners
Lee Rosenzweig	National Treasury
Simphiwe Sibiya	Engineering Council of South Africa (ECSA)
Maureen Sikepu	Federation for the Urban Poor (FEDUP)
Nompumelelo Siyaya	Department of Rural Development and Land Reform
Alison Tshangana	South African Local Government Association (SALGA)
Louis van der Walt	Department of Human Settlements
David van Niekerk	National Treasury
Ahmedi Vawda	Department of Planning Monitoring and Evaluation
Diet von Broembsen	Settlement policy consultant

Authors and content developers

Jacques Calitz	EOH Industrial Technologies
Dr Tony Ceronio	EOH Industrial Technologies
Cobus Compion	EOH Industrial Technologies
Dr Antony Cooper	CSIR
Dr Morris de Beer	CSIR
Dr Louw du Plessis	CSIR
Louiza Duncker	CSIR
Amanda Gibberd	Department of Transport
Cheri Green	CSIR
Frank Haupt	EOH Industrial Technologies
Gary Hayes	CSIR
Mluleki Hlatshwayo	CSIR
Julius Komba	CSIR
Tinus Kruger	CSIR
Kobus Labuschagne	CSIR
Henri Linde	EOH Industrial Technologies
Annemarie Loots	Urban planning consultant
Erik Loubser	EOH Industrial Technologies
Livison Mashoko	CSIR
Dr Martin Mgangira	CSIR
Dr Mathetha Mokonyama	CSIR
Lorato Motsatsi	CSIR
Nicholas Moult	EOH Industrial Technologies
Zanele Mpanza	CSIR
Crescent Mushwana	CSIR
Dr Mark Napier	CSIR
Dumisani Ndaba	CSIR
Thuli Ndlovu	CSIR
Dr Suzan Oelofse	CSIR
Engela Petzer	CSIR
Azra Rajab	CSIR
Nosizo Sebake	CSIR
Mamahloko Senatla	CSIR
Wilma Strydom	CSIR
Dr Henerica Tazvinga	CSIR
Jurie van der Merwe	EOH Industrial Technologies
Llewellyn van Wyk	CSIR
Gustav Vlok	EOH Industrial Technologies
Jarrad Wright	CSIR

Thematic Reference Groups

Prof Neil Armitage	University of Cape Town
Dr Mark Bannister	Department of Water and Sanitation
Adele Bosman	University of Stellenbosch
Chris Brooker	CBA Specialist Engineers
Samuel Chauke	Department of Human Settlements
Prof Chrisna du Plessis	University of Pretoria
Jonny Harris	Isidima Design and Development
Prof Heinz Jacobs	University of Stellenbosch
Leslie Johnson	Department of Transport
Dr Nonhlanhla Kalebaila	Water Research Commission
Mike Krynauw	City of Tshwane
Prof Karina Landman	University of Pretoria
Yashaen Luckan	South African Council for the Architectural Profession (SACAP)
Thando Madonsela	Housing Development Agency
Thiatu Manenzhe	Housing Development Agency
Lunga Mankazana	Department of Energy
Nokwazi Maphumulo	KwaZulu-Natal Department of Human Settlements
Lebogang Mojanaga	Department of Energy
Ernest Mokoena	Department of Social Development
Tshepo Mokwena	Department of Energy
David Mpye	University of Pretoria
Mukundisi Nefale	Department of Human Settlements
Helene Nienaber	Department of Public Works
Amy Pieterse	CSIR
Dr Sudhir Pillay	Water Research Commission
Ryan Roberts	South African Local Government Association (SALGA)
Sheena Satikge-Sibisi	Department of Rural Development and Land Reform
Grace Sekgota	Department of Transport
Duduzile Singeni	Department of Human Settlements
Aretha Steenkamp	Department of Social Development
Herman Steyn	City of Cape Town
Steve Szewczuk	CSIR
Willemien van Niekerk	CSIR
Frans van Wyk	South African Council for the Landscape Architectural Profession (SACLAP)
Prof Kobus van Zyl	University of Cape Town
Dr Kevin Wall	University of Pretoria
Melanie Wilkinson	Sustento Development Services

Consultation process

Consultation sessions were held in all nine provinces and included a wide selection of organisations and entities representing various sectors. While it is not practically possible to list the names of all the individuals who participated in the consultation process, their valuable contributions are sincerely appreciated.

In total, more than 770 individuals were consulted, and almost 80 consultation sessions took place across South Africa. Organisations and entities that were consulted include local, district and metropolitan municipalities, national and provincial government departments, statutory bodies, Community-Based Organisations (CBOs), Non-Governmental Organisations (NGOs), private sector companies, professional bodies, and academic and research institutions. In addition, various events and platforms were used to raise awareness, as listed below.

Awareness-raising events and platforms

Smart and Sustainable Built Environment (SASBE) Conference 2015	December 2015, Pretoria
Habitat III Thematic Meeting on Informal Settlements	April 2016, Pretoria
National Spatial Planning and Land Use Management (SPLUM) Forum	May 2016, Kempton Park
Annual Conference of the Water Institute of Southern Africa (WISA)	May 2016, Durban
Department of Human Settlements and SALGA Round Table on Planning, Design and Development of Integrated Human Settlements	June 2016, Kempton Park
Department of Human Settlements - Internal Workshop	June 2016, Pretoria
South African Planning Institute (SAPI) Conference: Planning Africa 2016	July 2016, Johannesburg
National Human Settlements Conference	October 2016, Port Elizabeth
SPLUM Forum Working Group 2	October 2016, Pretoria
Department of Human Settlements Civil Society workshop	March 2017, Kempton Park
Habitat for Humanity Practitioners' Forum	June 2017, Cape Town
SALGA: Western Cape Human Settlements Working Group	August 2017, Cape Town
Council for the Built Environment	27 September 2017, Pretoria
SALGA Focus Group Workshop	May 2018, Pretoria
South African Planning Institute (SAPI) Conference: Planning Africa 2018	October 2018, Cape Town
National SPLUM Forum	November 2018, Kempton Park

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CSIR	Dr Pravesh Debba, Kenny Kistan, Jo-Anne Chauvet, Martiena Maabe, all members of the Spatial Planning and Systems Competence Area
Department of Human Settlements	Antoinette Fivas, Maria Sebelebele, Lily Mahlo, Constance Ramathwala

Structure of this Guide

This Guide is divided into two parts. Part I contains sections A to E, while sections F to O make up Part II. The sections are colour-coded for ease of navigation.

Part I: Setting the scene

This part contains background information that frames the environment within which the Guide will be applied. The term 'human settlement' is defined, the human settlement context in South Africa is briefly discussed and key global trends and challenges are highlighted. A vision for human settlements in South Africa is formulated based on international imperatives and the local regulatory environment. Against this background, the purpose, nature and scope of the Guide are explained.

In addition, the sphere of influence of this Guide is defined in terms of the phases involved in neighbourhood development projects. The positioning of this Guide within the broader regulatory environment is clarified, and the importance of adopting an integrated approach when implementing the Guide is emphasised. The factors to consider when applying the guidelines, including the application context and the type of development, are described. The need to involve all stakeholders in the planning and design process is emphasised and the importance of inter-disciplinary collaboration, community participation and co-production is explained.

Part II: Planning and design guidelines

A series of guidelines dealing with the planning and design of services and infrastructure is presented in this part. Practical information is provided regarding settlement layout, housing, social facilities, public open space, transportation, water, sanitation, stormwater, solid waste management, energy and a number of cross-cutting issues. The information in sections F to N is structured in the same format as follows:

- An **outline of the section** that also contextualises the theme of the section in relation to the other aspects addressed in the Guide.
- A discussion of **universal considerations**, which ensures that key aspects are considered from the outset. This includes a brief summary of the applicable regulatory environment, an outline of the key objectives to be strived for when applying the planning and design guidelines provided in the particular section. Furthermore, possible approaches and strategies that could be employed to achieve the objectives, as well as concepts and trends related to the theme of the section, are highlighted. Attention is also drawn to the contextual factors that should be considered regarding the type, nature and setting of the development project being implemented.
- **Planning considerations** are discussed next. Planning in this context means making decisions regarding the type and level of service that will be provided. To make informed decisions, a thorough understanding is required of the context within which the planned development will be implemented. This section outlines a range of factors that have to be considered before deciding on the type and level of service that will be provided and the associated systems and infrastructure that will have to be designed. It provides guidance that will assist in understanding what is needed, and what is available. Various options of the types and levels of service that could possibly be considered are discussed.
- Finally, **design considerations** are outlined. Detailed guidance is provided, explaining how to design the systems and infrastructure relevant to each section.

At the end of Part I and the end of sections F to O, a glossary and a list of acronyms and abbreviations are provided, as well as endnotes containing references, explanatory notes and acknowledgements.

Where information relevant to a particular discussion is provided in other sections of the Guide, those sections are cross-referenced to encourage an integrated approach to decision-making when applying the guidelines. More information regarding the application of the guidelines is provided in **Section C** and **Section D**.

Text boxes are used to emphasise some of the information provided in this Guide. The following symbols indicate the reason why the information is highlighted:

More detailed information is provided about the issue under discussion

Important considerations to be aware of are highlighted

Relevant content from a complementing resource is presented

PART I: SETTING THE SCENE	
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B	A vision for human settlements
C	Purpose, nature and scope of this Guide
D	How to use this Guide
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F	Neighbourhood layout and structure
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L	Stormwater
M	Solid waste management
N	Electrical energy
O	Cross-cutting issues
	Planning and designing safe communities
	Universal design

Section A
The Human Settlements Context
The Neighbourhood Planning and Design Guide

A.1 Human settlements

A human settlement, in essence, can be described as a place where people have settled down to live; a place where they carry out various activities as individuals or as a community, including working, socialising, shopping, relaxing and sleeping. Inevitably, the characteristics of different human settlements will vary, for instance with respect to size, location, structure, form, function and inhabitants.

A settlement typically includes the following components:
• The built environment, including houses, engineering infrastructure and facilities
• The natural environment, including vegetation, rivers, hills and valleys
• Services related to, for instance, healthcare, welfare, education, culture, recreation and administration
• The residents (people)

The term human settlement is all-encompassing and refers to anything from a small group of dwelling units to a village, town and city. It is not defined by size, function, setting (e.g. urban or rural) or other characteristics.

Photo credit: Chris Kirchhoff (R) - www.brandsouthafrica.com

Figure A.1: The term human settlement refers to anything from a small group of dwellings to a large city

According to the *Vancouver Declaration on Human Settlements (1976)*, human settlements "...mean the totality of the human community – whether city, town or village – with all the social, material, organizational, spiritual and cultural elements that sustain it".[1]

The nature and characteristics of human settlements are influenced by a range of factors. These factors could relate to the macro context, for instance country-specific aspects such as the country's geography, political systems, history or cultural heritage. They could also relate to local features such as topography, rivers, springs, hills and mountains, railway lines, roads, mining activities and harbours.

Many of these factors have influenced the nature and characteristics of South African cities, towns, villages and even neighbourhoods. Some of these factors – and the South African human settlement landscape in general – are briefly discussed in the next section.
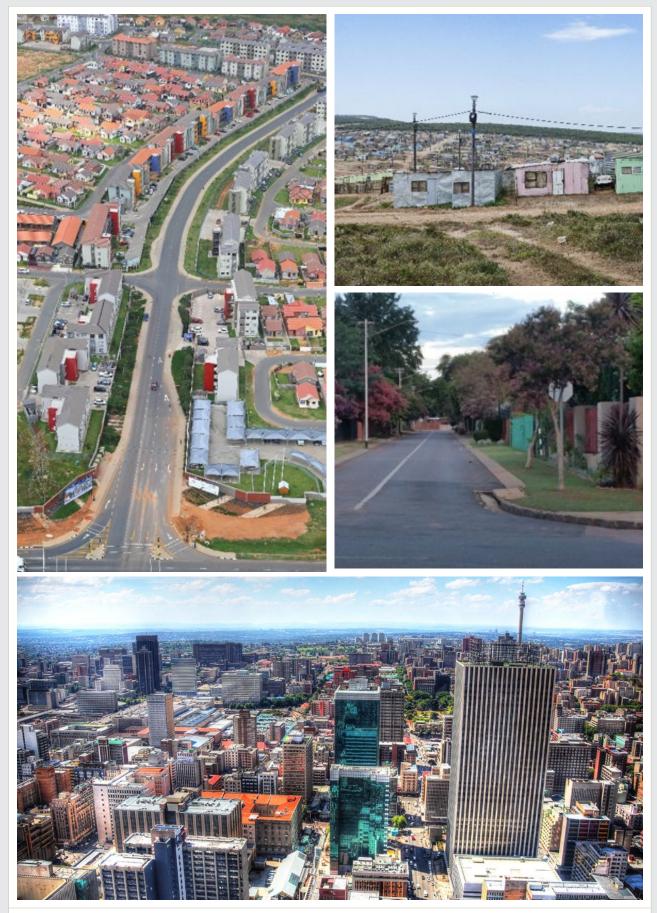
Figure A.2: The nature and characteristics of cities, towns, villages and neighbourhoods vary

A.2 Human settlements in South Africa

According to the National Development Plan 2030 (NDP), some aspects of the human settlement environment in South Africa have been transformed noticeably since 1994 when the first democratic elections were held. Encouraging trends include an increase in densities in a number of urban areas, the partial regeneration of certain inner cities, the provision of public transport infrastructure in some places[2] and the transformation of the racial composition of many previously predominantly white suburbs as a result of the growth of the black middle class.[3]

Notable changes in the character and racial composition of Central Business Districts (CBDs) and inner city areas of many cities and towns have occurred since 1994. These areas continue to experience an influx of predominantly black residents looking for employment opportunities or wanting to reside closer to their places of employment. Unfortunately, adequate accommodation is not always available, resulting in unacceptable living conditions due to overcrowding of residential buildings, especially blocks of flats and other rental accommodation. In some cases the physical environment in these areas has deteriorated considerably and businesses have relocated elsewhere. To meet the need of the changing consumer base, different types of businesses providing commercial, recreational and entertainment services have been established, including informal trading.[4]

In some cities and towns, formal economic activities have become more dispersed and less concentrated. Certain businesses relocate away from the traditional economic hubs such as the town or city centre to locations closer to the periphery where there may be less congestion, security may be better, land may be less expensive and access to major transport routes may be more convenient. In some cases, this resulted in a multi-centred, or polycentric, spatial form.[5]

Changes to other aspects of the space economy are also evident. For instance, the use of housing units (whether formal, informal, or in predominantly residential neighbourhoods) as businesses to generate income changes the character of neighbourhoods. Public spaces such as sidewalks and transport interchanges are furthermore often used by vendors to sell various products. These contributions to the so-called informal economy challenge conventional perceptions and realities about settlement economies.[6]

Figure A.3: Informal settlements and informal economic activity are features of many South African settlements

Informal settlements are a common feature of many South African towns and cities. In many cases they provide new migrants and the urban poor an affordable point of access into towns and cities. However, they are also associated with high degrees of physical and social vulnerability, which add to the challenges faced by residents and authorities. The upgrading of these settlements is often a contentious issue.[7]

In some cases, the country's urban landscape has been influenced by the prevalence of crime. The unacceptably high levels of violent crime, as well as the fear of crime, have contributed to the implementation of built environment interventions to address these concerns. Middle- to high-income neighbourhoods in particular are often characterised by high fences and walls, often supplemented by electric fences. In addition, public access to some neighbourhoods is restricted by means of street closures and access control mechanisms (Figure A.4). Various other forms of privately developed gated communities are becoming increasingly popular, varying in size from small townhouse complexes to expansive lifestyle or security estates. In some cases, these developments have a substantial impact on the structure and functioning of cities and towns, and it could be argued that they do not support current planning policies and strategies aimed at promoting integration.[8]
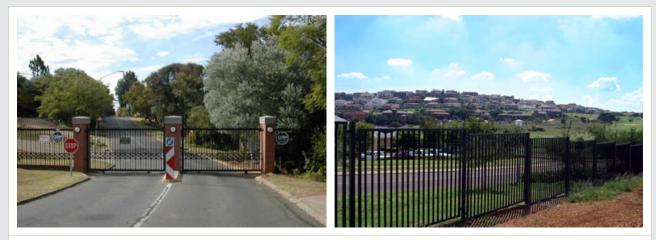

Figure A.4: Road closures and security estates influence the nature of the urban landscape

The results of planning principles and approaches that were directly influenced by the country's apartheid ideology are still visible in spatial patterns and in the form and structure of South African cities and towns. For decades, this ideology as well as the modernist approach to urban planning dominated the planning and design of settlements in South Africa, resulting in the legacy of racial segregation, poverty and exclusion from social and economic opportunities.[9] Spatial challenges also include sprawl, low-density and mono-functional (often fragmented) neighbourhoods.

Many parts of South African cities and towns – particularly those developed specifically for poor communities – are still characterised by a lack of adequate infrastructure, facilities and amenities, low levels of service and few or undesirable public spaces. These areas are often located on the periphery of cities and towns, and therefore residents generally have to travel long distances to and from their places of employment, shops and social, recreational, healthcare or other facilities. This negatively affects the quality of life of those living in these areas and has significant financial implications. It also increases pollution levels and results in the inefficient utilisation of resources.

"After the 1994 elections, Government committed itself to developing more liveable, equitable and sustainable cities. Key elements of this framework included pursuing a more compact urban form, facilitating higher densities, mixed land use development, and integrating land use and public transport planning, so as to ensure more diverse and responsive environments whilst reducing travelling distances. Despite all these well-intended measures, the inequalities and inefficiencies of the apartheid space economy, has lingered on."[10]

South African human settlements are inextricably linked to the country's socio-economic context. This means that poverty, unemployment, inequality, crime and violence and other challenges have an impact on the sustainability of cities and towns. In addition, global trends and challenges have to be considered, as outlined in the next section.

Photo credit: City of Cape Town (R, T)

Figure A.5: Spatial characteristics of South African settlements include sprawl, fragmentation and inequality

"A great deal of progress has been made since 1994, but South Africa is far from achieving the Reconstruction and Development Programme (RDP) goals of 'breaking down apartheid geography through land reform, more compact cities, decent public transport and the development of industries and services that use local resources and/or meet local needs'. Despite reforms to the planning system, colonial and apartheid legacies still structure space across different scales."[11]

A.3 Global trends and challenges

Climate change poses a significant threat to the planet and the people living on it. Human settlements where more and more people are living are particularly exposed to the consequences of climate change and are vulnerable to natural disaster risks.

The following challenges related to settlements resulting from climate change are listed in the *National Climate Change Response Policy*:[12]

- Climate change may exacerbate the problems caused by poor urban management. For example, poor stormwater drainage systems and urban-induced soil erosion result in flash flooding. Increased storm intensity due to climate change would exacerbate such problems.
- Cities are particularly vulnerable to climate change because they are slow to adapt to changes in the environment and they have entrenched dependencies on specific delivery mechanisms for critical services.
- The effective management of the interface between urban residents and their surrounding environment producing sustainable social-ecological systems needs to the addressed. Similarly, the concept of climate resilience in the context of urban social-ecological systems needs to be further developed.
- South Africa's cities still reflect apartheid planning with the poorest communities tending to live far away from services and employment. Our cities are relatively spread out and these two factors contribute to increased transport emissions.
- Water demand in urban centres is growing rapidly, placing undue stress on water supply systems. Investment in waste water treatment works has not remained in line with the growth in demand and use.
- Informal settlements are vulnerable to floods and fires, exacerbated by their location in flood- or ponding-prone areas and on sand dunes; inferior building materials; and inadequate road access for emergency vehicles.
- Cities and dense urban settlements consume large amounts of energy.

Informality as it relates to settlement and housing form, the way income is generated and the way in which people live in and interact with cities and towns is a worldwide phenomenon that seems to become more and more prevalent in the Global South. Informality is often associated with illegitimate behaviour and with marginalised people and communities, but arguments have been made for it to be acknowledged and accommodated in the planning and design of cities.

Rapid urbanisation is a global phenomenon, and the situation is no different in Africa and South Africa. It is predicted that Africa's urban population will increase from approximately 1.23 billion people in 2015 to 2.5 billion people in 2050 (60% of the total population). According to estimates by the United Nations, more than 71% of the South African population will live in urban areas by 2030. Urbanisation places added strain on cities and towns that struggle to deal with the demands already placed on them. To reduce the impact of urbanisation, many cities and towns internationally are striving to become more resource efficient so as to be more sustainable and competitive. Unfortunately it seems South African cities and towns have not yet fully embraced this notion.[13]

Section B
A vision for human settlements
The Neighbourhood Planning and Design Guide

B.1 International imperatives

Since 2015, member states of the United Nations have been expected to frame their agendas and political policies for a period of 15 years according to "Transforming our World: the 2030 Agenda for Sustainable Development". Commonly referred to as the 17 Sustainable Development Goals, it is a "plan of action for people, planet and prosperity".[14] Many of the goals are relevant to human settlements, but Goal 11 deals specifically with sustainable cities and communities: "Make cities and human settlements inclusive, safe, resilient and sustainable."[15]

At the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) held in Quito, Ecuador, in October 2016, a document known as the New Urban Agenda was adopted. The purpose of this agenda is to guide national and local policies on the growth and development of cities up to 2036. It shares "...a vision of cities for all, referring to the equal use and enjoyment of cities and human settlements, seeking to promote inclusivity and ensure that all inhabitants, of present and future generations, without discrimination of any kind, are able to inhabit and produce just, safe, healthy, accessible, affordable, resilient and sustainable cities and human settlements to foster prosperity and quality of life for all".[16]

In *The New Urban Agenda*[17], human settlements are envisaged that:

- Fulfil their social function, including the social and ecological function of land, with a view to progressively achieving the full realization of the right to adequate housing as a component of the right to an adequate standard of living, without discrimination, universal access to safe and affordable drinking water and sanitation, as well as equal access for all to public goods and quality services in areas such as food security and nutrition, health, education, infrastructure, mobility and transportation, energy, air quality and livelihoods;
- Are participatory, promote civic engagement, engender a sense of belonging and ownership among all their inhabitants, prioritize safe, inclusive, accessible, green and quality public spaces that are friendly for families, enhance social and intergenerational interactions, cultural expressions and political participation, as appropriate, and foster social cohesion, inclusion and safety in peaceful and pluralistic societies, where the needs of all inhabitants are met, recognizing the specific needs of those in vulnerable situations;
- Achieve gender equality and empower all women and girls by ensuring women's full and effective participation and equal rights in all fields and in leadership at all levels of decision making, by ensuring decent work and equal pay for equal work, or work of equal value, for all women and by preventing and eliminating all forms of discrimination, violence and harassment against women and girls in private and public spaces;
- Meet the challenges and opportunities of present and future sustained, inclusive and sustainable economic growth, leveraging urbanization for structural transformation, high productivity, value-added activities and resource efficiency, harnessing local economies and taking note of the contribution of the informal economy while supporting a sustainable transition to the formal economy;
- Fulfil their territorial functions across administrative boundaries and act as hubs and drivers for balanced, sustainable and integrated urban and territorial development at all levels;
- Promote age- and gender-responsive planning and investment for sustainable, safe and accessible urban mobility for all and resource-efficient transport systems for passengers and freight, effectively linking people, places, goods, services and economic opportunities;
- Adopt and implement disaster risk reduction and management, reduce vulnerability, build resilience and responsiveness to natural and human-made hazards and foster mitigation of and adaptation to climate change;
- Protect, conserve, restore and promote their ecosystems, water, natural habitats and biodiversity, minimize their environmental impact and change to sustainable consumption and production patterns.

From an African perspective, a strategic framework for the socio-economic transformation of the continent was developed by the African Union Commission. "Agenda 2063 – The Africa we want" outlines a number of aspirations. It includes an Africa where "[c]ities and other settlements are hubs of cultural and economic activities, with modernized infrastructure, and people have access to affordable and decent housing including housing finance together with all the basic necessities of life such as, water, sanitation, energy, public transport and ICT".[18]

These international goals and agendas inform the actions taken to improve South African human settlements and complement the aims and objectives as described in the next section.

B.2 South African settlements – the policy environment

Various policies, strategies, frameworks, plans and other documents highlight the principles to be applied when developing human settlements and describe a range of qualities and characteristics that cities, towns and neighbourhoods should strive to display. Collectively, they describe various aims and objectives to be achieved and define a vision for human settlements in South Africa.

Key elements of selected documents are briefly highlighted below.

(i)   National Development Plan 2030: Our Future – Make it Work

The National Development Plan 2030 (NDP) provides a long-term vision for the country and defines a desired destination, specifically aiming to eliminate poverty and reduce inequality by 2030. In Chapter 8 it explicitly addresses the transformation of human settlements and the national space economy. The NDP foresees that planning will be "...guided by a set of normative principles to create spaces that are liveable, equitable, sustainable, resilient and efficient, and support economic opportunities and social cohesion".[19] It also expects there to be meaningful and measurable progress in creating more functionally integrated, balanced and vibrant urban settlements by 2030.[20] It proposes a strategy that would "...address the apartheid geography and create the conditions for more humane – and environmentally sustainable – living and working environments".[21]

"All new developments should enhance the ideal of creating vibrant, diverse, safe and valued places."[22]

The NDP supports and promotes a range of actions and objectives, including densification, informal settlement upgrading on suitably located land, improving transport, inner-city regeneration and neighbourhood safety. It encourages the design of cities and towns for long-term resilience and flexibility, and gives attention to citizen vulnerability and safety in response to economic uncertainties and climate change.

The following overarching principles for spatial development are identified in the NDP:[23]

- **Spatial justice**. The historic policy of confining particular groups to limited space, as in ghettoisation and segregation, and the unfair allocation of public resources between areas, must be reversed to ensure that the needs of the poor are addressed first rather than last.
- **Spatial sustainability**. Sustainable patterns of consumption and production should be supported, and ways of living promoted that do not damage the natural environment.
- **Spatial resilience**. Vulnerability to environmental degradation, resource scarcity and climatic shocks must be reduced. Ecological systems should be protected and replenished.
- **Spatial quality**. The aesthetic and functional features of housing and the built environment need to be improved to create liveable, vibrant and valued places that allow for access and inclusion of people with disabilities.
- **Spatial efficiency**. Productive activity and jobs should be supported, and burdens on business minimised. Efficient commuting patterns and circulation of goods and services should be encouraged, with regulatory procedures that do not impose unnecessary costs on development.

(ii) Integrated Urban Development Framework

The Integrated Urban Development Framework (IUDF) is the South African government's policy framework that intends to guide the future growth and management of urban areas. Its purpose is to steer urban growth towards a sustainable growth model of compact, connected and coordinated cities and towns so as to achieve the intended outcome of spatial transformation.

The IUDF aims to create a shared understanding across government and society regarding the creation of inclusive, resilient, resource-efficient and liveable urban settlements, given the unique conditions and challenges facing South Africa's cities and towns.

> "Prosperous and liveable cities are urban spaces where citizens feel safe from violence and crime, and can take full advantage of the economic, social and cultural opportunities offered by cities."[24]

The IUDF discusses nine policy levers that should contribute to the restructuring of urban space and effect the transformation of human settlements. These levers are summarised below.[25]

- **Integrated urban planning and management**
  Cities and towns that are well planned and efficient, and so capture the benefits of productivity and growth, invest in integrated social and economic development, and reduce pollution and carbon emissions, resulting in a sustainable quality of life for all citizens.
- **Integrated transport and mobility**
  Cities and towns where goods and services are transported efficiently, and where people can walk, cycle and use different transport modes to access economic opportunities, education institutions, health facilities and places of recreation.
- **Integrated sustainable human settlements**
  Cities and towns that are liveable, integrated and multi-functional, in which all settlements are well connected to essential and social services, as well as to areas of work opportunities.
- **Integrated urban infrastructure**
  Cities and towns that have transitioned from traditional approaches to resource-efficient infrastructure systems that provide for both universal access and more inclusive economic growth.
- **Efficient land governance and management**
  Cities and towns that grow through investments in land and property, and that provide income for municipalities, which allows for further investments in infrastructure and services, and results in inclusive, multi-functional urban spaces.
- **Inclusive economic development**
  Cities and towns that are dynamic and efficient, foster entrepreneurialism and innovation, sustain livelihoods, enable inclusive economic growth, and generate the tax base needed to sustain and expand public services and amenities.
- **Empowered active communities**
  Cities and towns that are stable, safe, just and tolerant, and that respect and embrace diversity, equality of opportunity and participation of all people, including disadvantaged and vulnerable groups and persons.
- **Effective urban governance**
  Cities and towns that have the necessary institutional, fiscal and planning capabilities to manage multiple urban stakeholders and intergovernmental relations, in order to build inclusive, resilient and liveable urban spaces.

- **Sustainable finances**
  Cities and towns that are supported by a fiscal framework that acknowledges the developmental potential and pressures of urban spaces, that manage their finances effectively and efficiently, and that are able to access the necessary resources and partnerships for inclusive urban growth.

The nine policy levers are supported by, and must be read in conjunction with, the following cross-cutting issues:

Rural-urban interdependency - recognising the need for a more comprehensive, integrated approach to urban development that responds to both the urban and the rural environments.

Urban resilience - disaster risk reduction and mitigation interventions in the planning and management of urban areas.

Urban safety - an essential ingredient for creating liveable and prosperous cities, particularly safety in public spaces.

A vision for urban areas according to the IUDF[26]

Liveable, safe, resource-efficient cities and towns that are socially integrated, economically inclusive and globally competitive, where residents actively participate in urban life.

Strategic goals outlined in the IUDF[27]

The following four strategic goals contribute to achieving the transformative vision of restructured urban spaces and compact, connected cities and towns:

- **Spatial integration** – To forge new spatial forms in settlement, transport, social and economic areas.
- **Inclusion and access** – To ensure people have access to social and economic services, opportunities and choice.
- **Growth** – To harness urban dynamism for inclusive, sustainable economic growth and development.
- **Governance** – To enhance the capacity of the state and its citizens to work together to achieve spatial and social integration.

(iii) Comprehensive Plan for the Development of Sustainable Human Settlements

The Comprehensive Plan for the Development of Sustainable Human Settlements, also known as Breaking New Ground (BNG), promotes a move away from a "...commoditised focus of housing delivery toward more responsive mechanisms which addresses the multi-dimensional needs of sustainable human settlements".[28] It advocates that, rather than focusing on the provision of basic shelter, more efficient and sustainable human settlements should be developed. It encourages higher densities, mixed land use, the integration of land use and public transport planning and a more compact urban form to support the creation of more diverse and responsive environments and reduced travelling distances.

BNG envisions that present and future inhabitants of human settlements should "...live in a safe and secure environment and have adequate access to economic opportunities, a mix of safe and secure housing and tenure types, reliable and affordable basic services, educational, entertainment and cultural activities and health, welfare and police services".[29]

"Sustainable human settlements refer to well-managed entities in which economic growth and social development are in balance with the carrying capacity of the natural systems on which they depend for their existence and result in sustainable development, wealth creation, poverty alleviation and equity."[30]

(iv) National Climate Change Response White Paper

The National Climate Change Response White Paper outlines South Africa's commitment to making a fair contribution to stabilising global greenhouse gas (GHG) concentrations in the atmosphere and to protecting the country and its people from the impacts of inevitable climate change.

The National Climate Change Response White Paper "...presents the vision for an effective climate change response and the long-term transition to a climate-resilient, equitable and internationally competitive lower-carbon economy and society – a vision premised on Government's commitment to sustainable development and a better life for all".[31]

Section 5 of the White Paper[32] outlines responses to climate change challenges linked to specific sectors, including the human settlements sector. Proposed responses include the following:

- Investigate how to leverage opportunities presented by urban densification to build climate-resilient urban infrastructure and promote behavioural change as part of urban planning and growth management.
- In the implementation of low-cost housing, ensure access to affordable lower-carbon public transport systems, incorporate thermal efficiency into designs and use climate-resilient technologies.
- Encourage and develop water sensitive urban design to capture water in the urban landscape and to minimise pollution, erosion and disturbance.
- Ensure that land use zoning regulations are enforced and that urban land use planning considers the impacts of climate change and the need to sustain ecosystem services when considering settlements and infrastructure development proposals.

B.3 A vision for South African settlements

In the discussions so far, a range of key principles, aims and objectives were identified that are intended to guide the development of human settlements in South Africa. Various qualities have also emerged that need to characterise cities and towns to improve the living environments for all residents and create the transformed settlement landscape envisioned for the country. Against this background, the following could be regarded as a vision for human settlements:

Sustainable human settlements are liveable, vibrant, diverse, resilient and valued; they are socially integrated, economically inclusive places where residents feel safe and in which economic growth and social development are in balance with the carrying capacity of the natural systems on which they depend for their existence.

It is important to recognise that the country has many types of cities and towns, with different roles and requirements, and therefore the vision has to be interpreted in response to the context and pursued in a differentiated and locally relevant way.[33]

C.1 Aim and objectives of this Guide

The overall aim of this Guide is to give effect to the vision for South African human settlements outlined in **Section B.3** by providing guidance regarding neighbourhood-level planning and design. The Guide is intended to address some of the challenges and assist in achieving the aims and objectives discussed in sections A and B, while it also supports South Africa's efforts to achieve the Sustainable Development Goals and pursue the visions outlined in the New Urban Agenda and Agenda 2063 (see **Section B1**).

To accomplish this, the objectives of this Guide are to:

• indicate the qualities that should be sought in South African settlements and neighbourhoods, and to provide practical guidance on how these qualities can be achieved through the implementation of physical development projects;
• inform neighbourhood-level decision-making related to the planning and design of the various physical components of human settlements; and
• encourage integrated settlement and neighbourhood planning and design, to promote sound urban planning and design principles and to assist in improving the efficiency of engineering services and infrastructure.

Figure C.1: Neighbourhoods are the 'building blocks' of settlements and differ in nature and character

C.2 Nature and scope of this Guide

The purpose of this Guide is to provide practical information related to the planning and design of the range of services and infrastructure typically provided as part of a neighbourhood development project. The application of the guidelines should ultimately result in the delivery of infrastructure and services that are effective and efficient and that contribute to the realisation of the vision for human settlements as outlined in **Section B.3.**

> The Guide is primarily intended to inform the decisions made as part of a project aimed at developing a specific part of a city or town (referred to as a 'neighbourhood' in this Guide). The exact definition of a neighbourhood is not of critical importance when applying this Guide. Neighbourhoods are not constructs such as provinces and countries, and it is not always possible or practical to clearly delineate a neighbourhood. It may also not necessarily be helpful to establish definite boundaries that clearly exclude and include certain areas, services or facilities.
>
> This document is not intended as a planning guide for an entire city or town, but by applying the guidelines at a neighbourhood level, the aims and objectives to be achieved at a city or town level should be supported and reinforced.

The guidelines are aimed largely at neighbourhood-level services and infrastructure. Bulk services and amenities such as main water supply pipelines, outfall sewers, treatment works, landfills, freeways and so forth are considered beyond the scope of this Guide. For the most part it also does not include detailed site and building-level information.

The Guide allows for differences in context, for instance urban, rural and peri-urban; and also for various geotechnical and topographical conditions. The guidelines are applicable to different types of developments including greenfield, brownfield and informal settlement upgrading projects. (See **Section D.3**.)

It is essential to keep the following in mind:

- The guidelines are not prescriptive and require interpretation informed by the application context. They should not be regarded as minimum standards or regulations. Guidelines in general are intended to assist decision-making, whereas standards are normally considered as measurable, enforceable limits. Both the rigid application of guidelines and the setting of inappropriate standards often have the opposite effect to what was intended.
- This Guide is not a substitute for professional or practical experience and it recognises the importance of professional responsibility where applicable.
- Judgement should always be exercised based on the actual circumstances. The Guide includes information about good practices and aims to encourage innovation and creativity.

C.3 The sphere of influence of this Guide

As outlined above, the intention with the guidelines is to assist those involved in the various aspects of a neighbourhood development project with making informed planning and design decisions. Development projects involve numerous phases that can be spread over many years, even decades. The typical phases of a conventional development project are indicated in Figure C.2. Since the types of development projects vary, the phases as indicated will vary, as will the role players involved in the process. Some projects are developer driven, aimed at middle- to higher-income residents and require private sector funding. Other projects are aimed at low-income communities and involve the participation of government departments and entities, community-based organisations and non-government organisations. They are usually partly dependent on government funding in the form of grants and subsidies. (The processes to be followed for these types of project are outlined in the *Housing Project Process Guide* developed by the Department of Human Settlements.[34])

Figure C.2: The typical phases of a conventional development project – sphere of influence of this Guide

As indicated in Figure C.2, the sphere of influence of this Guide is confined to specific aspects of the development process. Certain phases need to be completed before the issues addressed in this Guide become relevant, and some phases will be implemented after the phases that involve the application of the guidelines This Guide is primarily focused on the phases involving neighbourhood layout planning, municipal services planning and layout and infrastructure design. However, the Guide could also be of practical use during the conceptualisation and project planning phases, and also when appointing a project team. It could provide guidance with the preparation of a brief (terms of reference), the development of a proposal in response to the brief, the evaluation of proposals, as well as the subsequent planning and design of the development. Despite this specific focus of the Guide, it is important to remember that decisions made during these phases will have an impact on certain aspects of the community participation process, the construction of the development as well as the operation, maintenance and management of the infrastructure.

The success of a development project is dependent on sound decision-making during all phases of the project, and the information provided in this Guide will not be able to undo the impact of poor decisions made during the early stages of a project. In particular, the location of the project and the characteristics of the land to be developed should be considered carefully. Finding suitable land could be difficult, and land assembly is often a challenging undertaking that could take several years.

Suitable land – a critical aspect of a development project

A key decision that needs to be made at the outset relates to the location and characteristics of the intended development site. Depending on the type of project, some or all of the following factors need to be taken into consideration:

- The location of the land may have to align with national and provincial strategic objectives as outlined in (for instance) Spatial Development Frameworks and it may have to adhere to spatial targeting requirements.
- The location of the land may also have to align with local development objectives as outlined in (for instance) the relevant Integrated Development Plan (IDP), specifically the Spatial Development Framework (SDF) and the Built Environment Performance Plan (BEPP).
- The potential for integrating the development into the existing settlement (for instance, access to transport, economic activities, amenities and services).
- The physical characteristics of the land, including the topography, geology, size and shape.
- The local context, for instance whether the setting is rural, urban or peri-urban, the nature of the immediate surrounding environment and neighbourhoods, demographic characteristics, etc.
- Zoning and land use, land claims, servitudes, ownership and other legal aspects.

More information is available in the *Guidelines for the identification of well-located land for human settlements.*[35]

C.4 Target users

This Guide contains information relevant to all built environment practitioners, particularly those involved in the planning and design of human settlements. It is intended to provide support to both the private and public sectors. Potential users of the guidelines include the following:

- Built environment professionals and practitioners, including engineers (civil, transportation, electrical, etc.), urban planners, architects, landscape architects, urban designers, etc.
- Active citizens and community groups involved in people-driven housing development initiatives.
- Decision-makers, influencers and those who are required to develop policy, including local government councillors.
- Residents (communities) and others who need information that will enable them to better understand the consequences of decisions related to the provision of services and infrastructure.
- Tertiary institutions, particularly students and lecturers involved in the built environment professions.

Different types of readers would use the information for different reasons, and in some cases only those with specialist knowledge and experience would be able to interpret and apply some of the guidelines. However, the information is presented in a way that is as accessible and user-friendly as possible.

"One of the most valuable contributions over the next five years is to build the capabilities for effective spatial decision making and implementation. These capabilities are required in local, provincial and national government, educational and research institutions, the spatial professions such as planning, urban design and architecture and society at large."[36]
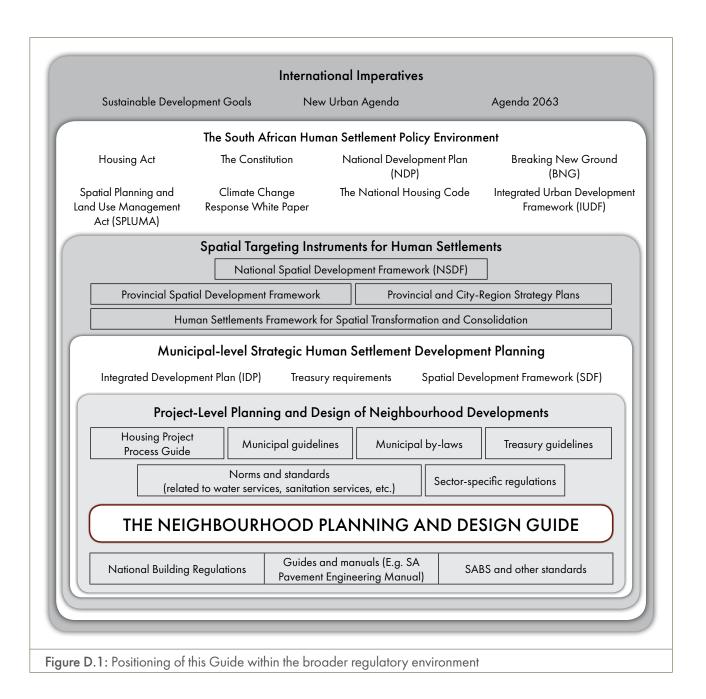
Section D
How to use this Guide

The Neighbourhood Planning and Design Guide

D.1 An integrated approach

The success of this Guide is dependent on the integration of the different aspects addressed in it when applying the guidelines in an actual development project. This means that when decisions are taken about one aspect of the proposed development, the implications these decisions may have on other aspects should be carefully considered. It is vital that the different sections of this Guide are not applied in isolation, but that the relationships between the different aspects dealt with in different sections are taken into account. A fundamental principle to keep in mind is collaboration, and, linked to it, effective communication. These principles are discussed in more detail in **Section E** (Working together).

When applying this Guide, cognisance should be taken of a range of acts, policies, frameworks and strategies. Since the Guide is aimed at project-level decision-making, specific attention should be paid to related guidelines, regulations, codes, norms and standards as illustrated in Figure D.1.

International Imperatives

Sustainable Development Goals　　　　New Urban Agenda　　　　Agenda 2063

The South African Human Settlement Policy Environment

Housing Act	The Constitution	National Development Plan (NDP)	Breaking New Ground (BNG)
Spatial Planning and Land Use Management Act (SPLUMA)	Climate Change Response White Paper	The National Housing Code	Integrated Urban Development Framework (IUDF)

Spatial Targeting Instruments for Human Settlements

National Spatial Development Framework (NSDF)

Provincial Spatial Development Framework　　　　Provincial and City-Region Strategy Plans

Human Settlements Framework for Spatial Transformation and Consolidation

Municipal-level Strategic Human Settlement Development Planning

Integrated Development Plan (IDP)　　　Treasury requirements　　　Spatial Development Framework (SDF)

Project-Level Planning and Design of Neighbourhood Developments

Housing Project Process Guide	Municipal guidelines	Municipal by-laws	Treasury guidelines

Norms and standards (related to water services, sanitation services, etc.)　　　Sector-specific regulations

THE NEIGHBOURHOOD PLANNING AND DESIGN GUIDE

National Building Regulations　　　Guides and manuals (E.g. SA Pavement Engineering Manual)　　　SABS and other standards

Figure D.1: Positioning of this Guide within the broader regulatory environment

D.2 A context-specific approach

Neighbourhood development projects are influenced by, and should be responsive to, their implementation context, for instance the location of the development and the nature of the land to be developed. The context of an informal settlement upgrading project would for example differ substantially from that of a greenfield development, and a greenfield development would be planned and designed differently when located in an urban area as opposed to a rural area. It is therefore important to carefully consider the context when applying this Guide.

Another factor that needs to be considered relates to the funding source and mechanism used to implement the development project. Projects associated with any of the housing assistance programmes and subsidy instruments outlined in the Housing Code of the National Department of Human Settlements need to satisfy the requirements as described in the Code. These requirements have to be considered in conjunction with the information provided in this Guide.

Developments associated with government housing assistance programmes and subsidies

The information provided in this Guide supports the objectives of the various assistance programmes and subsidy instruments included in the Housing Code.[37] The priority programmes and subsidies are revised from time to time, but they could include the following:

- **Integrated Residential Development Programme (IRDP)**
  The intention with this programme is to facilitate social, economic and spatial integration. It allows for the acquisition of land, servicing of stands for a variety of land uses including commercial, recreational, schools and clinics, as well as residential stands for low, middle and high-income groups.
- **Upgrading of Informal Settlement Programme (UISP)**
  This programme aims to improve the living conditions of people living in informal settlements by providing access to basic services and a choice of housing tenure options (including rental and options to buy).
- **Social Housing Programme**
  This programme allows for the provision of affordable rental accommodation, managed by social housing institutions, through a combination of government grants, private sector funding and equity.

Other programmes and subsidies include the Rural Subsidy (Communal Land Rights), the Provision of Basic Social and Economic Facilities Programme, the Individual Subsidy Programme, the Enhanced People's Housing Process Programme and the Farm Residents Housing Programme.

The context is determined by a range of factors that are generally linked to the type of development and the location or setting of the development, as briefly discussed below. These factors should be considered in more detail when applying the guidelines provided in Part II of this Guide, and therefore they are again referred to in sections F to N.

D.2.1 Type of development

The type of development relates to the nature of the particular site where development will occur. Development projects are most commonly categorised as greenfield, brownfield or informal settlement upgrading.

D.2.1.1 Greenfield development

A greenfield site is a vacant piece of land that has never been developed (built on). It could include agricultural land, open space (public or private), or natural unspoilt environments such as grasslands or forests. Greenfield sites could be located within the urban environment, adjacent to urban boundaries or in rural settings.

A greenfield development has certain advantages and disadvantages. A greenfield project may allow for more flexibility with respect to the planning and design of the development, and it could also unlock the potential of an entire area, resulting in new economic, housing and recreational opportunities. The layout and structure of the proposed development is not constrained by the existing built environment and existing buildings do not have to be demolished or somehow incorporated into the new development.

However, greenfield sites may not always have direct access to services such as water, sanitation, electricity and roads. This could have financial implications that should be taken into consideration when the development is planned. Furthermore, the ongoing consumption of undeveloped land, in particular productive agricultural land and green open space, is a serious concern. It contributes to the depletion of food production areas, increases motor vehicle usage and pollution, and may require additional expensive engineering services and infrastructure that may place an additional burden on municipal service delivery.

Care should be taken to ensure that a greenfield development does not enhance the negative characteristics of South African settlements as mentioned in **Section A.2**. If located on the periphery of a town or city, such developments could amplify the inequalities and inefficiencies of a city or town by (for instance) increasing travel distances to and from the residents' places of employment, shops and social, recreational, healthcare or other facilities. Special efforts should be made to ensure that the new development enhances spatial and social integration and economic inclusivity, and to create a positively performing neighbourhood as described in **Section F.2.2**.
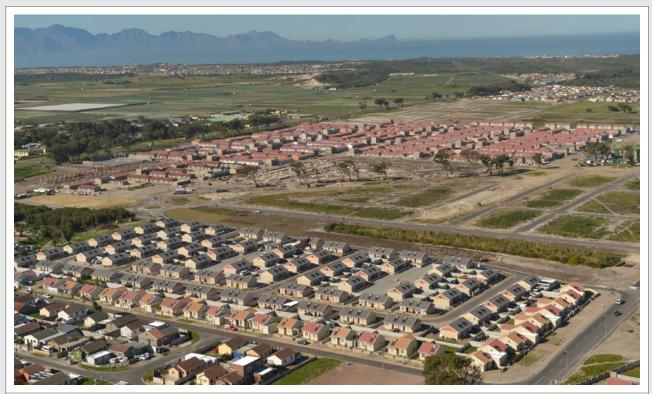

Photo credit: City of Cape Town

Figure D.2: Example of a greenfield site

D.2.1.2 Brownfield development

A brownfield site refers to an area with existing infrastructure (buildings, roads and municipal services) that has the potential for further development, i.e. expansion, upgrading, renovation and/or rezoning. Brownfield sites could be defined as follows:

- Abandoned, dormant or underused industrial or commercial areas that could be transformed into residential or mixed-use neighbourhoods
- Town or city centres that need to be transformed or adapted to meet changing requirements
- Run-down neighbourhoods that have the potential to be revitalised
- Existing residential or mixed-use neighbourhoods that present the opportunity for sites to be subdivided and, if required, rezoned

A brownfield project could take on several forms. It could involve the total redevelopment of an area and the upgrading of existing infrastructure, or the installation of new infrastructure. It could also involve the upgrading of an area, including the renovating, repurposing or demolishing of existing buildings or areas (e.g. inner-city upgrading programmes) and it could involve infill developments on patches of vacant or underutilised land in a built-up area.
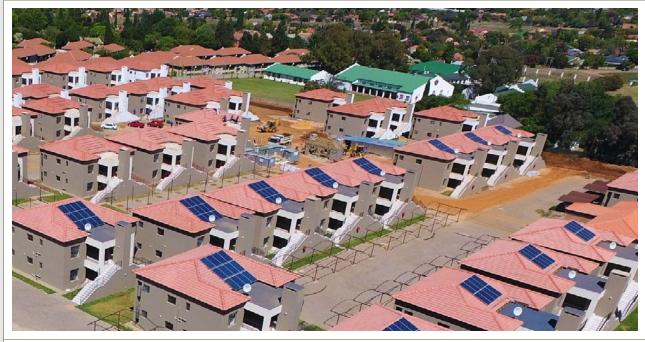

Photo credit: SSI Group

Figure D.3: Example of a development on a brownfield site

A brownfield development may have clear benefits, including potential savings because some bulk services may already be available. It is a more efficient way of using land and other resources; it could possibly have access to existing services and transport networks; or it may address urban decay. Brownfield projects could also contribute to the preservation of heritage sites and buildings, and the revitalisation of historic sites. The redevelopment of certain areas could sometimes act as a catalyst for the redevelopment of neighbouring areas and lead to a general enhancement of the surrounding area.

However, brownfield developments could also be costly and time consuming. Brownfield sites may be contaminated from previous uses, especially industrial, which could require rehabilitation of the site to remove all contaminants such

as oil, asbestos, chemicals and other pollutants. Since residents, businesses and visitors would have to be consulted as part of the development process, their concerns could negatively influence or delay the proposed development. Existing infrastructure such as buildings, roads and engineering services could further restrict the design of the development. The redevelopment of certain neighbourhoods could lead to the gentrification of the area and thus force low-income residents to leave their homes, their community, their family and employment.

D.2.1.3 Informal settlement upgrading

Informal settlements are defined in a number of ways. According to Statistics South Africa, an informal settlement is "...an unplanned settlement on land which has not been surveyed or proclaimed as residential, consisting mainly of informal dwellings (shacks)".[38] They define an informal dwelling as "...a makeshift structure not approved by a local authority and not intended as a permanent dwelling".[39]

The National Housing Code of 2009[40] outlines several features that characterise informal settlements, including the following:

- **Illegality and informality**. Settlements are usually on unproclaimed land, or occupied without permission of the landowner (whether public or private).
- **Inappropriate locations**. Many settlements are located in marginal sites where development is inappropriate or even dangerous. These include sites on unsuitable geological conditions (such as dolomite), unsuitable topography (for example, steep slopes at risk of landslip or sites within flood lines), near heavy industrial infrastructure (such as mine dumps, slimes dumps or within smell zones) or within water, gas or electricity servitudes.
- **Restricted public and private sector investment**. Informal settlements typically have no or only rudimentary levels of services (such as water, sanitation and waste collection). Private enterprises rarely rise above the levels of survivalist activities, spaza shops and the like. The insecure status of informal settlements, coupled with low levels of public investment and lack of tenure, discourages households from investing in their shelter.

Figure D.4: Examples of informal settlement upgrading

The upgrading of informal settlements is a key component of the government's endeavours to deliver housing. Targeted programmes that have been established to support upgrading initiatives include the National Upgrading Support Programme (NUSP) and the UISP. The intention with these programmes is to support the provision of basic services (including water and sanitation) and security of tenure, while also empowering communities. A range of methods can be employed to provide housing, including self-build, the People's Housing Process, social housing, affordable rental or utilising individual or consolidation subsidies.

A staged process is encouraged, involving the incremental improvement of the quality of life through the provision of services and tenure. As far as possible, in-situ upgrading processes are preferred to minimise the need to relocate residents, thereby disrupting existing structures and community cohesion. Some informal settlements may appear to be unstructured and lack order, but the communities are often well organised and have support mechanisms and regulating structures in place. In certain cases, in-situ upgrading may not be an option, for instance when the location poses a threat to the health and lives of the residents. (See the reference to inappropriate locations in **Section D.2.1.3**.)

Despite the emphasis on in-situ upgrading, some local authorities and practitioners find it particularly challenging. Comprehensive support is provided in the form of a Resource Kit that is available on the NUSP website.[41]

Informal settlement upgrading according to the National Upgrading Support Programme (NUSP)[42]

There is a strong recognition that informal settlement upgrading is a social process, involving people who already inhabit the land and who therefore have to be partners in the upgrading process. This aspect is called co-production. This means that informal settlement communities need to be actively engaged at key levels in the formulation of a strategy and project plans.

The underlying philosophy of incremental informal settlement upgrading is as follows:

- Informal settlement residents have nowhere else to go and have found a way to make a living where they currently are.
- It is best to incrementally build on what they have already done themselves.
- By building on what people have done and listening to what they need, people's lives can best be improved.
- In this way, they can be integrated into the town or city.
- This means residents are partners in the upgrading process and stakeholders in the town or city.

D.2.2 The setting/location of the planned development

The setting of a development relates to the nature of the broader area within which it will be located. The setting is generally categorised as urban, peri-urban or rural.

D.2.2.1 Urban

The urban environment typically includes metropolitan areas, cities and towns. As such, the characteristics of different urban areas could vary substantially. The features of one part of a city or town could also differ significantly from those of other parts of the same city or town. Cities and towns consist of various parts, including central business districts, residential suburbs, informal settlements, and what used to be referred to as townships. These areas differ with respect to population and built environment density, as well as the availability and level of services and infrastructure.

In general, urban areas provide the settings for greenfield, brownfield and informal settlement upgrading projects. Cities and towns can provide opportunities for brownfield developments, including inner-city regeneration projects, the repurposing of buildings and the redevelopment or densification of residential neighbourhoods and abandoned industrial areas. When planning and designing these types of projects, the condition and capacity of existing services and infrastructure should be carefully considered.

Photo credit: Graeme Williams (R and B) - www.brandsouthafrica.com

Figure D.5: Examples of urban settings

D.2.2.2 Peri-urban

Peri-urban refers to the transitional space between rural and urban areas. This space becomes increasingly significant and contested as the process of urbanisation occurs and cities and towns continue to expand. The boundary line between rural, peri-urban and urban is not well defined and can therefore change rapidly. Because of this, municipalities find it difficult to manage urban sprawl. In some cases an urban edge is established to contain growth within a certain boundary. Land in peri-urban areas is often less expensive than urban land, and it is therefore popular for low-density greenfield development projects, which contribute to the urban sprawl phenomenon. Peri-urban areas often provide the settings not only for middle-income cluster complexes and high-income lifestyle estates, but also for informal settlements.

Photo credit: Durbanville Wine Valley (R) - www.brandsouthafrica.com

Figure D.6: Examples of peri-urban settings

D.2.2.3 Rural

Rural areas are usually sparsely populated and located outside the limits of a city or town. They include rural villages and small towns, dense rural settlements and dispersed settlements. The approach to the planning and design of neighbourhood development projects in rural towns is often similar to the approach taken in more urbanised areas. However, more sparsely populated rural areas and villages may have particular characteristics that require a less conventional approach. Factors that need to be considered include land ownership and tenure, especially since land may be communal property and under the control of traditional leaders.

Photo credit: Graeme Williams (L) - www.brandsouthafrica.com

Figure D.7: Examples of rural settings

D.3 A structured decision-making approach

D.3.1 A decision-making framework

The information provided in each of the different sections of Part II of this Guide is presented systematically to ensure that various factors that could potentially influence decisions are considered. The different sections deal with the following themes:

- Neighbourhood layout and structure
- Public open space
- Housing and social facilities
- Transportation and road pavements
- Water supply
- Sanitation
- Stormwater
- Solid waste management
- Electrical energy

The last section of Part II deals with two cross-cutting issues, namely planning and designing safe communities and universal design. Where applicable, these issues should be considered when making decisions related to each of the themes.

Each of the sections dealing with the different themes is structured to support effective decision-making, as described below. This structuring framework is outlined in Figure D.8.

Universal considerations

General aspects that should be taken into consideration when making higher level decisions regarding the theme of the particular section (as listed in Section D.3.1 above) are highlighted, including the following:

- The regulatory environment, including key legislation, policies, frameworks and strategies
- The key objectives that should be achieved as a result of the application of the guidelines provided
- Local or international approaches, mechanisms, concepts and current trends that could possibly be utilised to achieve the key objectives
- Contextual factors specific to the development project to be implemented such as the development type and setting

Planning considerations

Factors to consider when making more detailed decisions regarding the theme of the particular section are outlined, including the following:

- The characteristics of the development, including the nature of the proposed neighbourhood, the anticipated number of residents and specific features that would have to be incorporated or requirements that would have to be met
- The existing features of the site and immediate surroundings (built and natural environment) as determined by the physical location of the proposed development
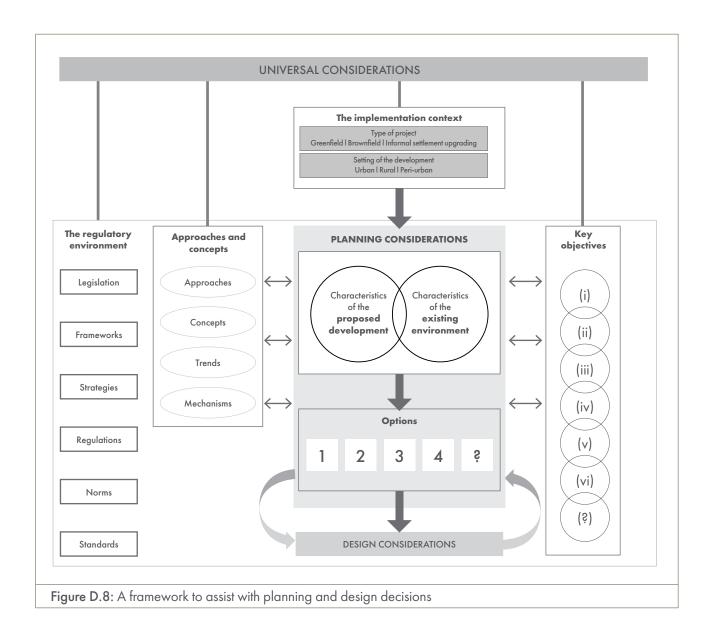
- Options related to the theme of the particular section that are available for consideration

Design considerations

Guidelines to assist with the design of the options that have been selected.

Glossary, acronyms, abbreviations and endnotes

A glossary, a list of acronyms and abbreviations, and endnotes (containing sources of information, explanatory comments, etc.) are provided at the end of the particular section.

Figure D.8: A framework to assist with planning and design decisions

D.3.2 Options and choices

A range of service and infrastructure options are provided in each of the sections dealing with the various themes as listed in **Section D.3.1**. When applying this Guide, it is essential to consider as many factors as possible to assist in selecting the option most suitable to the development project being implemented. By using the framework presented in Figure D.8, useful information will be gathered to inform decisions regarding options. Decisions can be influenced by various factors, including financial considerations (capital and life-cycle costs), the context (location and associated characteristics) and user preferences. After all the factors have been considered, it may be necessary to make some compromises when deciding on the level and type of services and the infrastructure to be provided, since it may not always be possible to satisfy all requirements with one particular option.

When implementing projects that utilise government funding (grants and subsidies), in particular informal settlement upgrading projects, making these difficult decisions requires effective community participation (see **Section E.1**). This Guide provides those involved in such projects with information to assist in making informed decisions. The information also helps when trade-offs needs to be made when deciding between different levels or types of service, or when comparing different infrastructure options.

E.1 Participatory human settlement development

Very often, the success of a development project is dependent on the degree to which all role players actively participated in the implementation process. However, those responsible for implementing a development project (specifically a housing project in a low-income community) do not always have a clear understanding of the process that needs to be followed to involve the community and other key stakeholders, and they do not always see the benefit of doing this. Also, built environment professionals and technical consultants do not always have the capacity and skills to effectively engage with communities.

E.1.1 Participation versus consultation

A common misconception is that the involvement of the community and other key stakeholders is simply a step in the implementation process. Often it is seen as an event, or a few workshops that need to be held to satisfy certain requirements before moving on to the next step in the process. However, it should be an integral part of the entire process and the fundamental approach that governs all aspects, from inception through to implementation. Participation involves much more than consultation or information-sharing sessions. Participation, as opposed to consultation, allows for the active involvement of communities and key stakeholders in the decision-making process, rather than requiring them to (for instance) simply choose a type of technology or house from a set of pre-determined options presented.

> There is a difference between community participation and consultation. When implementing a project, a consultative process often merely involves asking key stakeholders for their opinions about proposed interventions. This does not allow for meaningful involvement in the decision-making process. A participatory process, on the other hand, requires people to be actively involved in decision-making from the very beginning of a project that would affect them. They should participate in the planning, design implementation and management aspects, rather than only being involved after most of the critical decisions have been made.

Community participation means that all stakeholders are equal and active partners in the decision-making process, and it provides everyone with the opportunity to contribute, exposes them to challenges faced, and lets them share the responsibility of developing practical responses to deal with these challenges. A participatory process could assist in changing perceptions, empowering people and developing a common understanding.

A participatory process could be complex and time intensive. It is often worth it to include specialists in the field of community participation in the project team. Since the process should be as inclusive as possible, it is important to identify and involve all key stakeholders and the recognised leaders in the community. Stakeholders could include municipal councillors, faith-based organisations, schools, businesses, civic organisations, sport groups, residents' associations, informal trading organisations and other community-based organisations.

E.1.2 Co-production

For this Guide to make a tangible, positive difference in practice, an implementation approach is encouraged that is based on equal partnerships between a range of role players – from those involved in the planning, design and delivery of services and infrastructure, to those utilising these services and infrastructure. Such an approach, which requires citizens to be involved in all aspects of the delivery of services and infrastructure (including the conception, planning, design, delivery and management phases) rather than mere passive recipients, is often referred to as co-production.

The concept of co-production can be described in various ways. Essentially it means that those providing a service, and the citizens who make use of the service, all have contributions to make. The process is based on the notion that those who make use of a service are often in the best position to assist with the development of the most appropriate service.

> **Co-production descriptions**
>
> "Co-production means delivering public services in an equal and reciprocal relationship between professionals, people using services, their families and their neighbours. Where activities are co-produced in this way, both services and neighbourhoods become far more effective agents of change."[43]
>
> "Co-production of public services means the public sector and citizens making better use of each other's assets and resources to achieve better outcomes and improved efficiency."[44]
>
> "Co-production enables citizens and professionals to share power and work together in equal partnership, to create opportunities for people to access support when they need it and to contribute to social change."[45]

Photo credit: Community Organisation Resource Centre (CORC)

Figure E.1: Community members participating in the decision-making process

E.2 Inter-disciplinary collaboration

The range of disciplines involved in a development project need to work closely together in a coordinated way to achieve the objectives of this Guide. From the outset, built environment professionals need to cooperate on an ongoing basis to ensure that the planning and design process continues as effectively and efficiently as possible. Engineers, planners, architects and other built environment professionals involved in the planning and design process need to continuously communicate to ensure that the decisions made are not in conflict with each other.

Communication and coordination between the different disciplines is essential within both the municipal and the professional consulting team. From the outset, decisions made by the various professions need to take into consideration all aspects of the development and not only those that they are traditionally responsible for. For instance, decisions regarding the layout of a new development should be taken after considering the potential consequences they may have for the provision of engineering services and vice versa.

"The key to successful interdisciplinary collaboration is in understanding that it is not a technology but rather a psychology. Collaboration is not a process that can be codified into a set system; it is more of an attitude that needs to be inculcated in the culture of a firm.

It begins with every participant acknowledging that each of the others brings something valuable to the project and that their combined intelligence is more likely to deliver positive results than working in isolated silos."[46]

Glossary, acronyms, abbreviations

Glossary

Engineering services
Engineering services include water provision, sewage removal, stormwater disposal, solid waste removal, ICT and electricity supply.

Integrated Development Plan
An Integrated Development Plan (IDP) is a strategic plan that sets out the development vision for a municipality and guides and informs all planning, budgeting and decision-making related to service delivery and development in the municipal area. The core components of an IDP are described in Chapter 5 of the Local Government Municipal Systems Act (No. 32 of 2000).

Spatial Development Framework
SPLUMA requires all three spheres of government to produce Spatial Development Frameworks (SDFs). The focus of the three types of SDF differ. The national SDF provides broad strategic direction, provincial SDFs focus on the coordination of spatial development, and a municipal SDF contains detailed plans for the particular area of jurisdiction. Within the municipal sphere, the SDF forms a core component of the Integrated Development Plan (IDP) and guides the overall spatial distribution of current and desirable land uses within a municipality to give effect to the vision, goals and objectives of the municipal IDP. A detailed description of the content of SDFs is provided in Chapter 4 of SPLUMA.

Acronyms and abbreviations

ARP	Alexandra Renewal Project
BEPP	Built Environment Performance Plan
BNG	Breaking New Ground
CBD	Central Business District
GHG	Global Greenhouse Gas
IDP	Integrated Development Plan
IUDF	Integrated Urban Development Framework
NUSP	National Upgrading Support Programme
RDP	Reconstruction and Development Programme
SDF	Spatial Development Framework
UISP	Upgrading of Informal Settlements Programme

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