



### **THE CHALLENGE OF CREATING SUSTAINABLE HUMAN SETTLEMENTS**

In South Africa we have a plethora of good legislation and policies which govern urban planning, housing, energy, water, sanitation, solid waste, transport and other aspects of settlements. But these complex and sometimes overlapping frameworks are difficult for councillors and officials to comprehend, and a veritable policy gridlock tends to obscure rather than facilitate sustainable solutions.

This manual thus focuses on practical and tangible sustainable development solutions that are in line with existing legislation and policy. In most sectors the challenge is not policy development but implementation and innovation in practice at municipal level.

However, there are serious constraints that need to be acknowledged and addressed. Short-term thinking that neglects longer-term social and environmental impacts, and entrenched traditional approaches to urban design and planning prevent the implementation of progressive policies and sustainable solutions. Many municipalities are also struggling to become financially viable, and only survive with significant national subsidies. In certain instances the Municipal Finance Management Act (MFMA) restricts their ability to innovate and operate optimally.

Then there is the general lack of interdepartmental and intergovernmental communication and collaboration. This leads to decisions being made in isolation, with negative impacts on other departments and development projects. Integrated development planning as required by law is seldom truly integrated, and rarely leads to integrated development and implementation in practice.

The National Department of Housing's Breaking New Ground is a good example of progressive policy based on the key development principles of integration and sustainability. But the challenge is for provincial departments and municipalities to put this policy into practice in the design and construction of sustainable human settlements. This manual is designed to help support the meeting of this challenge.

## Learning and Development are Essential

It is imperative that councillors, municipal officials and their contracted agents understand the new policies, and cooperate in developing new approaches to urban planning and upgrading, in partnership with communities and community-based organisations. This will require a clear, shared vision, political will and the commitment and participation of all stakeholders at local level in appropriate processes.

New and innovative approaches will require significant learning, and the development of new ways of working, from writing terms of reference based on integration and sustainability to clearing bureaucratic obstacles and accessing innovative funding options. Municipalities will need clear policies on development facilitation, and they will need to develop and contract the capacities required to facilitate sustainable settlement development.

## Principles for Designing Sustainable Settlements

The first principle is to understand settlements as living and evolving human communities, and not just a collection of physical structures that can be erected and forgotten. The built environment should provide a suitable 'body' for the life processes, social interaction and development of the soul and spirit of the community and its individual members and families.

Sustainable settlement planning should create a built environment that supports sustainable livelihoods and living in well-designed and integrated social, economic and environmental contexts. The following principles should guide the holistic planning of such settlements. Key components include good urban and housing design, integration of built and natural environments, sustainable technologies, methods and materials, and community participation in development processes.

## Appropriate Densification

Though many applicants for subsidised housing want stand-alone units, the cost and scarcity of well-located land and escalating transport costs makes this option increasingly unsustainable in larger towns and cities. Urban sprawl also creates inefficiencies in service provision, and reduces valuable agricultural land and potential green open spaces. Mixed-use development corridors with increased density can provide efficient public transport, local economic opportunities and varied services in residential areas.

Proper and progressive land planning and management are needed to provide land for formal settlements, for properly designed and managed informal settlements, and to curb land invasions and overcrowded settlements on unsuitable, un-serviced and often unserviceable land such as flood plains.

## Integration and Mixed-Use Development

Neighbourhoods are enriched by the integration of different social groups and income levels. Physical and functional integration include provision of essential services within walking distance to limit the need for motorized transport, integration of private and public spaces and of the built and green environment. Mixed use allows and encourages multiple activities, including living, working, trading, accessing services, appropriate

structures and recreation in the same areas, as opposed to the old single-use zoning approaches. This is essential to support the informal economy and local economic development.

## Sustainable Technologies

Sustainable technologies covered in this manual include renewable energy options and particularly solar water heating, which provides long-term energy and cost savings and lessens environmental impacts. In recognition of this, Eskom now provides a 15 to 20% (of cost) subsidy on solar water heating systems. Low and no-cost energy efficient designs can also enhance natural warming and cooling of homes, thereby reducing the homeowner's electricity costs and the load on Eskom. Other sustainable technologies and design applications that are practical and cost-efficient include: north orientation, roof overhangs, ceilings, insulation, CFL bulbs, water efficiency technologies, rain and stormwater retention and harvesting.

Many of these solutions save on infrastructure costs and support urban agriculture and greening. Local composting and reuse of organic materials reduces waste transportation, landfill airspace and enriches local soils. Sustainable waste management that involves waste reduction, recycling and reuse needs to be supported by appropriate facilities and community education and organization in order to reduce pollution, conserve resources and care for the environment. Sustainable waste management that involves communities also provides significant opportunities for local work and income generation, as demonstrated in Curitiba, a sustainable city in Brazil.

## Sustainable Materials

Sustainable materials represent an exciting area of innovation involving a mix of traditional methods and new technologies. Examples include the use of local natural materials, recycled building materials and soil stabilization (rather than removal and replacement). These materials and methods all lower transport costs and environmental impacts, reduce waste and often have significant cost advantages.

## Sustainable Economics

Many sustainable options can be supported by special housing and project subsidies. Such investments save money in the long-term, which becomes evident when life-cycle and full-cost accounting are applied, and include the externalized costs of environmental damage. In the past decade such potential costs have escalated exponentially as global warming drives climate changes that threaten increasing and unprecedented natural disasters. The Clean Development Mechanism as an international carbon credit exchange provides an innovative source of funding for renewable energy and energy efficiency projects such as the Kuyasa Low-income Urban Housing Energy Upgrading Project in Khayelitsha.

## Local Economic Development

Local economic development is essential to reduce poverty. Many sustainable construction and maintenance methods are labour-intensive and provide local work and income, skills development and

opportunities for local entrepreneurs and emerging contractors. The People's Housing Process, which allows citizens to participate in building and upgrading their own homes, is a good example. Sustainable construction also allows more money to remain and circulate in the local community. The development and maintenance of sustainable human settlements can constitute a comprehensive local economic development and poverty reduction strategy. Urban agriculture, greening, environmental care and development all provide significant opportunities for enhancing livelihoods, generating income and saving on costs in poor communities. In Cuba for example, a significant proportion of food is grown organically and locally, in and adjacent to urban areas.

## Creating an Enabling Environment

Though national policy supports sustainable practices, old thinking and habits, and bureaucratic inertia often prevail at provincial and local levels. Inappropriate restrictions need to be replaced with incentives for developments that include sustainable design criteria, technologies and materials in projects that provide appropriate and affordable accommodation to the urban poor. Various forms of land tenure are another necessary element that promotes flexibility and a variety of options to suit different needs and circumstances. Innovation in settlement design and housing construction also require changes in construction regulations, including those of the National Home Builders Registration Council (NHBRC), so that sustainable methods and materials are allowed and encouraged.

## Community Participation and Development

Sustainable settlement design and development cannot be achieved without community participation. Building sustainable settlements is not just a matter of delivering infrastructure and houses. People who inhabit settlements must be part of the process, as their activities and interaction constitute the life of any neighbourhood. Where the principles of participation are transgressed, alienation and soullessness can occur, resulting in a plethora of social ills and challenges. Planners need to recognise the full spectrum of human needs and engage community members by working with them to create neighbourhoods worthy of human beings. Such neighbourhoods can have a rich cultural-spiritual identity and soul life, as was evident in communities such as Sophia Town and District Six, which were destroyed by Apartheid planning.

Communities rarely survive relocation, as the process of uprooting a community usually destroys its social fabric. In-situ upgrading and incremental approaches to designing and building settlements are thus the preferred option for informal settlement upgrades. New innovative and participative approaches make this possible. The poverty and wealth of communities clearly have multiple dimensions that are not determined only by monetary values, individual incomes and material assets.

Sustainable approaches value and encourage variety, individual creativity and innovation, and are thus necessarily decentralised, diverse and bottom-up. Centralized, standardized and top-down approaches with ambitious quantitative targets seldom consider the quality of life recipients will experience in these settings. Municipalities can provide mechanisms which encourage timely delivery of developments. In the GAP housing

market, financial institutions often require potential home-owners to undergo (and pass) personal financial management courses in order to receive a home loan. Municipalities, linked with registered training providers and outcomes-based materials, can also provide appropriate training (and required attendance) for potential housing beneficiaries.

The National Department of Housing states that, “Housing policy and strategy must be structured so that South Africa’s housing process... maximizes the involvement of the community and leads to transformation of skills to and empowerment of the community to ensure higher levels of appropriateness and acceptability of such projects as well as the development of skills and capacities within these communities to pursue other development projects” (Department of Housing. 2000).

## Partnerships

Government cannot create sustainable settlements and reduce poverty alone. Partnerships and cooperation with communities, NGOs, donors and private sector stakeholders are essential, and a key principle of Agenda 21 and Sustainable Development. In all good case study examples, the cooperation of multiple stakeholders is a significant success factor. Appropriate and facilitated community participation processes are also necessary to avoid conflicts that arise when different groups compete for access to processes and resources. Many a development project with great potential has been wrecked by community conflicts and/or the failure of stakeholders to cooperate and collectively apply their diverse capacities to ensure effective project management and successful implementation.

## Sustainable Living and Livelihoods

Sustainable urban and housing designs, technologies, methods and materials only provide the starting point for sustainable ways of living and livelihoods, which are essential if human settlements or communities are to be truly sustainable. This requires ongoing community leadership, education and a variety of organic and managed development processes that maintain community organisation and sustainable living practices. Capital investment in developing infrastructure, housing and the urban environment also requires ongoing maintenance, otherwise assets deteriorate and housing estates degenerate into slums, compromising services and the quality of life, and requiring premature and costly rehabilitation or replacement. Research has shown that levels of crime and social problems are lower in neighbourhoods where people appreciate and care for their environment, and are involved in community relationships processes.

## Creating Sustainable Human Settlements

The development of sustainable human settlements clearly provides a significant, multi-dimensional and exciting challenge. Municipal and provincial officials and politicians responsible for implementing progressive policies such as Breaking New Ground must take the lead in mobilizing other stakeholder partners to address this challenge. This manual will have served its purpose if it has helped to inspire readers with a vision of sustainable human settlements and communities, and provided principles, practical solutions and innovative approaches for the progressive realization of this necessary development vision.