SECTION 4
GUIDELINES FOR SUSTAINABLE MEDIUM-DENSITY HOUSING
GUIDELINES FOR SUSTAINABLE MEDIUM-DENSITY HOUSING

According to *Breaking New Ground* the promotion of densification and integration are key objectives to “integrate previously excluded groups into the city and the benefits it offers, and to ensure the development of integrated, functional and environmentally sustainable human settlements, towns and cities”. The investigations of this book demonstrate the cohesive, interrelated nature of the pillars of sustainability upon which our human settlements rest: social, economic, ecological, physical, institutional and political. Understanding and responding appropriately to the sometimes subtle and sometimes obvious relationships between these precepts make for greater sustainability and community satisfaction. The guidelines in this book are underpinned and informed by lessons gleaned from the experiences of people living in higher-density housing. They draw on international and local best practice, theoretical considerations and on DAG’s experiences in human settlement development and partnerships with local communities.

The issues impacting on the overall sustainability of medium-density housing as established in the resource book are summarised in the figure below:
I. GOOD LOCATION AND HIGHER DENSITIES

There are complex but logical linkages between density and location, with implications ranging from issues of affordability to urban performance such as equity, integration, freedom, access and sustainability.

1. Location

Ideally, land for housing should be located close to transport, employment and other urban opportunities. More specifically it should:
- be within urban activity nodes or corridors;
- be close to places of employment, including lower-density suburbs which provide low skilled employment opportunities to domestic workers and gardeners;
- if not in an activity node or corridor, ideally be within 10 minutes walk (i.e. 500m) of an existing public transport route. Similarly, primary schools should be no more than 15 minutes walk away and high schools, clinics and libraries should be no more than 30 minutes walk away; and
- not be part of the open space system.

Low-income communities (where the majority of households have monthly incomes below R3,500) located on the edge of the city due to the market economy are unacceptably far from places of employment; their residents have to endure long travelling times and unsafe conditions. This often results in high costs in both money and time, with dire consequences for family and social circumstances. Despite its location adjacent to a regional transport interchange, low-income households from the Stock Road project spend more than R600 per month on transport costs due to limited employment and commercial opportunities in the area. Moreover, government’s transport-related expenditure becomes unjustifiably high, with even higher costs to the environment.

Conversely, the development of medium-density housing on strategically located land brings about maximum use of existing services and infrastructure, as well as providing opportunities for residential growth within urban areas. Of specific concern here are people employed in affluent areas as domestic workers, carers, childminders and gardeners, and in the hospitality industry. The Council for Scientific and Industrial Research (CSIR) has developed a model for measuring and comparing the costs and benefits of different low-income settlement locations. It found that the needs and priorities of low-income households differ with regard to location in relation to job opportunities and the researchers warn against a ‘one size fits all’ approach.

In the case of some of the settlements used to test the model, it was found that proximity to the city centre did not necessarily translate into lower transport costs for residents. In terms of proximity to employment opportunity, a significant finding was that in some instances it was more beneficial for residents to be located closer to middle and high-income neighbourhoods where they could access domestic employment, rather than closer to formal employment in the city centre.
Despite policies promoting integrated, sustainable settlement planning, low-income housing is still located on the periphery of our urban settlements. For the poor, location is often more important than housing quality as it directly impacts on the accessibility of urban opportunities and underpins social networks and livelihood strategies critical for survival. In response to this, BNG proposes measures to support higher-density development through:

- promoting higher densities in existing built areas (densification);
- encouraging the development of large vacant sites within built urban areas (infill); and
- restricting the outward expansion of urban areas, thus forcing new development inward (containment).

The infill approach to urban development using medium-and higher-density housing on well-located, underused land within the existing urban fabric, as opposed to building on the urban periphery, makes a strong contribution to urban renewal and integration. However, it requires incisive interventions and strategies from government, such as making available well-located state-owned and parastatal land through inter-governmental co-operation, as well as the acquisition of well-located private land for affordable housing development.

In the Springfield Terrace, Carr Gardens and Newtown Urban Village projects, relatively small pockets of inner-city state land were successfully developed to provide higher-density living for lower-income households. The acquisition, rehabilitation and conversion of vacant and dilapidated buildings in well-located areas must form part of an approach to address the housing needs of low-income households. The Samora Machel project was built on small pockets of land owned by provincial government in an existing neighbourhood, while an old caravan park site adjacent to a major transport route and suburb served as the site for Sakhasonke Village. The National Urban Development Strategy suggests that restrictions will increasingly be placed upon the number and scale of future peripheral subsidised housing projects, while acknowledging funding constraints to the price of well-located land.4

“**The real need is to increase accessibility and the way to do this is to reduce the need to travel: to bring about a more compact, integrated and diverse land use pattern.”**

Inner-city areas and particularly parcels of state-owned property in well-located areas are ideal locations for affordable medium-high-density housing. However, these remain unaffordable due to:

- high land prices;
- high costs of building conversion;
- difficulty in accommodating low-income residents at scale; and
- high service costs of the sophisticated infrastructure (e.g. lifts) associated with high-density developments.5

According to Isidima6, housing provision in appropriate locations needs to be linked to the ‘banking’ of suitably located land. A land fund must be created that can be used by municipalities to immediately purchase and ‘bank’ suitable land for housing that is aligned with the long-term land use plan. Another mechanism to fund land acquisition is the use of revenue via land taxation or through capturing revenue using internationally accepted methods. Acquisition of appropriate private property through land swaps, the allocation of land use rights and expropriation should also be considered. To complement transport subsidies, government should consider subsidising the purchase of land for housing. This could prove a cheaper option as it does not increase the burden on already heavily subsidised transport. It is important that government ensures sales of state land are aligned with the long-term land use plan. A percentage of the proceeds should be used to cross-subsidise lower-income housing elsewhere. The proceeds of such sales should be kept in a dedicated special account for funding lower-income housing.7

Government must review and re-align legislative, policy and institutional frameworks to fast-track the availability and affordability of well-located land for sustainable human settlements. Information from the land and buildings register must be used to develop a rapid land-release programme by national, provincial and local governments, as well as parastatals.8 Similarly, the state should release strategic inner-city sites for housing purposes.9 BNG envisions the release of such land to municipalities; financing and guiding the acquisition of private land for housing purposes in line with municipal IDPs and Spatial Development Frameworks; and introducing fiscal incentives and disincentives to support the development of well-located land. It is unclear to what extent these proposals have been translated into the provision of higher-density housing on well-located land.

**Guidelines**

- For the poor, location is often more important than housing quality as it directly impacts the accessibility of urban opportunities and underpins social networks and livelihood strategies critical for survival. However, despite policies promoting integrated sustainable settlement planning, low-income housing is still located on the periphery of urban areas, negatively impacting the poor’s accessibility to urban opportunities and incurring high monetary, time and social costs.

- The development of medium-density housing on well-located land brings about maximum use of existing services and infrastructure and provides opportunities for residential growth within urban areas. Well-located housing should be promoted through densification, promoting higher densities in existing built urban areas, and restricting the outward expansion of urban areas, thus forcing new development inwards.

- Land for housing should be located close to transport, employment and other urban opportunities and should be within urban activity nodes or corridors. It should be within 10 minutes walk (i.e. 500m) of an existing effective public transport route. Similarly, primary schools should be no more than 15 minutes walk away and high schools, clinics and libraries should be no more than 30 minutes walk away. Land for housing should not be part of the open space system.

- Well-located state-owned (including parastatal) land should be made available for lower-income housing and well-located private land must be acquired for this purpose as well. It is important that government urgently aligns legislative, policy and institutional frameworks to fast-track the availability
of well-located land for lower-income housing development, especially in inner-city areas.

- The sale of state-owned land should be aligned with long-term land use plans and the proceeds of sales or a percentage thereof should be used to cross-subsidise lower-income housing elsewhere. In addition, since there is already a heavy burden associated with subsidising transport, as an alternative government should subsidise the purchase of land.

- Suitably located land must be ‘banked’ and funds should be set aside for the acquisition of land for lower-income housing development. To facilitate land banking mechanisms such as land swaps, the allocation of land use rights and expropriation must be introduced.

- Revenue streams such as land taxation and other methods should be initiated to create funds for land acquisition or for lower-income housing development, and fiscal incentives and disincentives should be introduced to encourage the development of well-located land for lower-income housing development.

2. Density

Density pervades all components of the residential environment and has an array of implications for social, economic, environmental and strategic spheres that shape city structure and residential areas. Density should be used ‘rationally’ and ‘creatively’, and must be more than a static control mechanism or standard for calculating the number of community facilities required in a residential area. Density must be used to:

- establish new development forms;
- provide opportunities for a greater variety of residential development options;
- make available building forms which create higher densities without necessarily increasing height (such as low-rise medium-density housing); and
- formulate development strategies which go beyond transport needs.

As the table below illustrates, there are slight differences in understanding of the exact building densities that constitute low, medium and high density development. **Low density** can generally be understood as referring to approximately 40 or less dwelling units per hectare (gross), **medium density** to approximately 40–100 dwelling units per hectare (gross), and **high density** to around 100 or more dwelling units per hectare (gross).

<table>
<thead>
<tr>
<th>Table 6: Different densities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country</strong></td>
</tr>
<tr>
<td>South Africa</td>
</tr>
</tbody>
</table>
Internationally there are differences in how density and compaction are viewed and how policies have been applied based on diverse forms of urban development and patterns of growth.

### Table 7: Summary of comparative population densities of some large cities

<table>
<thead>
<tr>
<th>City</th>
<th>Population Density Per Hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsterdam</td>
<td>58 persons</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>293 persons</td>
</tr>
<tr>
<td>London</td>
<td>56 persons</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>20 persons</td>
</tr>
<tr>
<td>Melbourne</td>
<td>16 persons</td>
</tr>
<tr>
<td>Tokyo</td>
<td>105 persons</td>
</tr>
</tbody>
</table>

Photos: [www.flicker.com](http://www.flicker.com)

Physical, economic, social and political factors are linked to density in complex ways:

- at a **physical level** density affects housing layout, housing form, and city structure;
- at an **economic level** it affects land costs, transportation costs and the ability of governments, developers and residents to afford housing;
- at the **social level** it has implications for levels of social interaction, community, privacy and security; and
- at the **political level** it is fundamental in the utilisation of land and energy resources and in housing policy.

In addition, density also has implications at the **city level**, where it is related to the spatial extent of the city, the distribution and provision of community facilities, the provision and capacity of services, the extent and type of public transport, road capacities, city form and city economics.

It also has implications at the **local or site level** regarding house type, security, privacy, parking provision, developers’ costs, and social aspects such as lifestyle, stage in life cycle and height scale. Housing developments should not be so large that they alienate the people who live in them. Residents should be able to take responsibility for their environment, whether they are tenants or owner occupiers, and this is only possible when they live in developments or units which are appropriately scaled for this to be practicable.

One of the main arguments for encouraging higher densities is the efficient provision and maintenance of infrastructure: lower density means longer infrastructure runs and therefore higher cost per consumer both for installation and operation. Maximisation of the subsidy amount by using medium-density lowered project costs significantly in the Weltevreden Valley, Sakhasonke and Missionvale projects. It resulted in units that are more spacious and in attention to detail not usually considered in the delivery of state-subsidised housing.
• **Increased densities do not necessarily mean the extensive construction of high-rise buildings.** Truly urban, ground-related, higher-density environments can be achieved through low-rise medium-density housing, including attached housing, cluster housing and two-, three- and four-storey walk-up housing typologies. It is possible to create environments related to these housing types that are humanly scaled, safe, and provide the necessary privacy to residents.

• **Densification should not be encouraged everywhere**, but should be informed by an analysis of:
  • utility service capacities;
  • social dynamics;
  • impacts on existing developments and open space; and
  • vacant or under-used land.

Land policies of local authorities should inform the location of developments aimed at densification. To increase thresholds, new housing should be located around specific activity routes, around the intersection of transport routes, and around interchange points between different modes of transport. Similarly, vacant and under-used well-located land and inner city areas must be used to their full potential to transform the urban environment, and thus improve the social and economic situations of city dwellers.

• **Densification should not entirely prevent outward expansion of the city**, but should decelerate its growth while improving existing performance.

• **Densification should not be imposed on existing areas with under- and unused land.** Instead, policies should enable people to realise the economic benefits of densification. Potential for conflict occurs in cases where densification results in outsiders entering existing communities or where existing communities experience tension due to overcrowding. A solution would be to develop land parcels within existing communities for residents already living there in overcrowded conditions.  

Sprawling, low-density environments are unable to create thresholds that are high enough (typically minimum densities of 50 du/ha) to support efficient and viable public transportation and local economic development. Unsustainable sprawling settlement patterns are unaffordable to the majority of the South African population and entrench the use of the private car, increasing levels of air pollution and consuming fossil fuels.

The single biggest source of greenhouse gases is the transport sector and these emissions can be significantly reduced by planning and building in such a way that travel is reduced. Housing located close to employment, services and public transport implies a departure from conventional notions about the form of the built environment: building at higher densities will be preferable to lower densities and mixed land uses will be preferred to single-use zoning.  

Public transportation channels or corridors should be reinforced by higher-density housing located along corridors served by reliable and frequent public transport, where high degrees of activity mix in the form of public facilities, social services and private sector activities are present. Medium-density housing with access to public transport creates housing opportunities with lower parking requirements. Viable forms of public transport are more easily achievable in compact systems, and changing the mode of transport from private to public is a key sustainable energy intervention.

Higher-density housing should coincide with points of greatest accessibility such as transportation nodes/interchanges. All the case study projects in this publication are located within one kilometre of public transport routes or interchanges. However, due to its high levels of urban performance, land along transport
corridors and around transport nodes is relatively expensive. A co-ordinated approach that spans government departments and spheres is needed to access well-located state land in proximity to activity corridors.

BNG endorses the strong contribution that medium-density housing can make to urban renewal interventions. Well-located areas, such as inner-city areas near to high activity zones, are especially suitable for higher-density housing. In these areas, measures should be put in place by municipalities to protect the character of the area and to maintain affordability levels for residents. Social and co-operative housing such as the Newtown and Carr Gardens projects, as well as subsidised higher-density housing such as Springfield Terrace and Sakhasonke Village, are good examples of the positive contribution of higher-density housing on valuable land. Employment generation is affected by compactness and specialisation. Thus, greater economic diversification and specialisation occur in areas where relatively large local markets exist. Levels of social and commercial service are significantly higher and convenience and equity of access is greater in compact environments.

2.1 The ‘compact city’
Higher-density housing environments can potentially function positively with a wide range of community facilities that overlap and support each other. The ‘compact city model’ encourages urban densification and intensification, mixed-use development, public transportation, containment of urban growth and attention to urban design.

Compaction is necessary in South Africa because\(^{19}\):

- **It facilitates movement on foot** — compaction provides for urban environments that operate efficiently for pedestrians.
- **It promotes effective and efficient public transport** — the low-density sprawling nature of cities undermines the viability of large capacity fixed-line movement modes (trains, for example).
- **It encourages employment generation** — small businesses thrive in environments where local markets are intensive, diverse and specialised.

Despite its merits the compact city model has been criticised, especially on the grounds of whether it is acceptable to the public and whether it is feasible to implement.\(^{20}\) Although the majority of households may prefer a single dwelling on a single plot, this approach results in sprawl which is unsustainable at the city and regional levels. Ultimately, it should not be supported by government funding of infrastructure since it results in traffic congestion, air pollution and the loss of rural and primeval land.

Valid reasons for compaction can be found in environmental, social, economic, political and cultural considerations. In countries such as South Africa with extremely high levels of inequality, compaction should be an imperative towards more balanced, equitable and pro-poor settlements. However, affordable higher-density housing on well-located land for lower income earners, especially in the form of rental housing, is not currently being developed at scale by government. Government’s Community Residential Units Programme has the potential to introduce affordable medium-density public rental housing opportunities to low-income households in locations previously inaccessible to them.

Compelling questions are being raised about the acceptability, feasibility and complexity of the compact city as a mechanism for advancing urban sustainability. Williams et al.\(^{21}\) state that an urban context consists of a range of urban potentials. Compaction should be used as one way of achieving sustainable urban form.
The design of urban environments, especially at neighbourhood scale, is an important consideration for creating successful and attractive higher-density urban environments, where urban design is able to address the complex relationships between urban form, function and sustainability. Arbry found that an important indicator of a city’s sustainability lies in the pattern of density across a city; support for local services and facilities is dependent upon high residential densities rather than on a uniformly high density across a city. An important aspect of the compact city is:

“…the development of higher-density development along public corridors or the creation of high-density ’nodes’ or sub-centres, which concentrate traffic flows sufficiently to encourage public transport provision”.

An example of this is the City of Tshwane’s Compaction and Densification Strategy, which, in line with the principles of ‘smart growth’, provided for density diversity and a range of densification efforts around strategic locations in the city. Four general density zones within the municipal area were identified that can be applied to areas with varying characteristics and density:

<table>
<thead>
<tr>
<th>Concentration Zones</th>
<th>Linear Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suburban Densification Zones</td>
<td>Low Density Zones</td>
</tr>
</tbody>
</table>

Pre-requisites for the restructuring of these zones are identified:

- Functional linkage to and distance from opportunity (node, station, economic area and surrounding land use)
- Location and prominence within the city
- Desired or planned character of the area
- Accessibility
- Socio-economic characteristics:
  - Lifestyle
  - Household size
  - Level of urbanisation
- Special attributes (e.g. historical, cultural or aesthetical heritage)
- Existing infrastructure
- Long term prospect
- Current level of public transport
- Site characteristics
- Environmental consideration
- Land availability and costs vs. opportunities for redevelopment

Research by the CSIR Building and Construction Technology, as well as the CSIR and the University of Pretoria presents empirical evidence to challenge the widely held view that costs increase with distance from the centre to the periphery and decrease with increasing density, and that higher livelihood benefits accrue from locations closer to the central city. Because of historic land-use patterns, the incremental nature of infrastructure investment, and the impact of non-locality related factors, bulk infrastructure, services and land costs do not simply decrease with increasing density and decreasing distance from central areas.
Due to additional demand placed on the system as a whole, total infrastructure costs increase as density increases, while per capita costs decrease with increasing densities for some cost items but not for all (e.g. electricity per capita costs increase with increasing density). It was found that for all services considered, it could be more costly to develop the more central areas because of existing space capacity and environmental and land use conditions. The way in which these conditions influence infrastructure costs proved to be unrelated to distance from central areas.

The locality cost study showed that more centrally located low-income housing areas do not necessarily perform better in terms of lower servicing costs and creating more sustainable livelihoods. The more peripheral case study area was shown to perform better in terms of lower crime levels, natural capital, impact on surrounding land uses, and bulk water and sanitation provision costs. The more centrally located area performed better in terms of access to formal work opportunities and opportunities for informal employment activities. Household location and travel expenditure are not simple functions of distance from central areas but are influenced by proximity to other development nodes, the pricing practices of transport providers and household lifestyle choices. There is insufficient evidence in the literature to conclude that densification is the cost effective alternative in all situations and under all conditions. Moreover, owing to varying local circumstances related to different locations, conclusions relating to urban form should not be generalised or transferred to any other study area and the use of "simple dichotomies such as 'central' versus 'peripheral' are perhaps less useful in the context of the multi-nodal, expanding South African city."

Policy recommendations based on the studies relating to sprawl and densification are that:

- Development should be promoted in areas of existing spare infrastructure capacity and where infrastructure would be relatively less expensive to provide (avoiding slopes of greater than 12 degrees, highly intensive land use and areas of dolomite).
- Municipalities should charge the real cost of services in order to recover the real bulk infrastructure cost of development. Private developers should pay local authorities the total costs for services provision should they develop in areas that are not cost effective in this respect. Levying of services contributions in local authorities is often on an averaged basis, encouraging sprawl: peripheral land costs are usually less and infrastructure costs high, yet services cost to developers and consumers is the same as infill development in a more central location where land costs are higher. By levying real costs, development would occur where it makes economic sense and, as a result, reduce the negative impacts of sprawl.

The compact city is a complex concept linked to an increase in density as well as a variety of densities across the urban area.

Density should be context-specific and depends on a range of factors:

- **land availability and costs** – at points of high accessibility and visibility where land is scarce, higher densities would be required;
- **location and transport** – public transport should be reinforced by providing higher densities in localities with high levels of access;
- **social context and household size** – acceptability of densities are highly influenced by household size and lifestyle;
- **cultural acceptance** – despite general preference, a wide range of housing types should be explored; and
- **environmental considerations** – carrying capacity of environmentally sensitive land may necessitate lower gross densities and higher net densities.

Mix of urban uses is another important aspect of compact cities. Mixed-use refers to a shift away from dormitory suburbs and office parks, thus reducing travel times when commercial and other urban activities are in close proximity to residential areas. It supports pedestrian traffic as social equity is improved through increased accessibility and activity density. Mixed-use neighbourhoods display a combination of commercial,
social and business uses, a range of house types and sizes and a diversity of people. The stigma attached to high-density environments and the perception of resultant slums and ghettos is reduced through the mix and variety of housing options, urban opportunities and incomes. Integrating higher-density housing and public transport directly affects the sustainability of communities and access to employment. Sprawling settlements incur huge cost burdens on the poor as well as on the country’s economy in the form of public transport subsidies.

In 1999 the government provided a subsidy of R4,000 per annum for every bus commuter and R1,000 for every train commuter travelling 30km to work. A commuter living 5km from work requires no subsidy. Passenger transit services and pedestrian improvements are most cost effective within a mixed-use environment. Therefore, intricate linkages exist between density, location and levels of accessibility.

Mixed-use development brings about economic, social and environmental benefits:

- promotes small home-based enterprises, making livelihoods creation possible for women and the disabled;
- brings about agglomeration benefits that increase economic efficiency and productivity;
- encourages small enterprises that would not survive in a rental environment or businesses that operate only when demand exists;
- reduces transport costs and relieves overload on transport infrastructure;
- impacts on equity as it is beneficial to pedestrians and people reliant on public transport;
- reduces crime rates in certain parts of the city that would otherwise be deserted at night;
- promotes multi-functional use of public services and facility sharing, which reduces costs;
- maximises the use of existing social and utility infrastructures;
- revenue bases for local authorities are higher for mixed-use areas than for residential only areas;
- reduces the cost of public infrastructure and services provision such as roads, municipal services, policing and social facilities; and
- increases liveability, neighbourhood interaction and community cohesion.

A significant degree of integration promotes convenience for users. Facilities should be easily accessible, preferably within reasonable walking distance, and their nature should be determined over time as different communities have different priorities. Social facilities should be provided at significant places where they are accessible and can be shared between different communities. Community facilities should be provided in such a way that a range of uses can be accommodated. It is in communities with a lack of private resources that the importance of public facilities becomes apparent. The case studies revealed that general household satisfaction and perceived improvement of quality of life for residents depended on access to community and social facilities. The following guidelines for community facilities should apply in well-functioning urban environments.

### Table 8: Guidelines for community facilities

<table>
<thead>
<tr>
<th>Facility</th>
<th>Approximate threshold</th>
<th>Maximum range</th>
<th>Approximate size</th>
<th>Maximum walking time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crèche/small multi-purpose facility</td>
<td>300 DUs</td>
<td>300m</td>
<td>&lt;0,1 ha</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Primary school</td>
<td>500 DUs</td>
<td>700m</td>
<td>0,7–1,4 ha</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Secondary school</td>
<td>1,500 DUs</td>
<td>1,400m</td>
<td>1,4–2,6 ha</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Community centre (hall/library/clinic)</td>
<td>3,000 DUs</td>
<td>1,400m</td>
<td>0,1–0,5 ha</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Sportsfields</td>
<td>1 per 2 primary schools + 1 per secondary school (1 sportsfield = 0,65 Ha)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As each site suggests its own optimum density, maximum density can only be determined during the site planning process. Pre-establishing density for housing environments is at best an approximation, but by drawing upon precedent and best practice examples, considering household type, and by assessing the surrounding situation, a density range can be established. Important practical considerations are that density levels must be environmentally and culturally appropriate and acceptable. The degree to which these regulations and standards are adhered to will define the density outcome of the urban environment. They include:  

- total number of occupants per dwelling;  
- total area of the dwellings;  
- legislation regulating plot coverage;  
- floor area ratio (FAR); and  
- total space allocated for vehicles.

The layouts in Missionvale, Samora Machel, Sakhasonke Village, Stock Road and N2 Gateway (Phase I) employed various measures to maximise the number of units. In particular, narrow roads presumed low vehicle ownership but communal parking areas were provided. Parking encroaches on recreational and green areas in Carr Gardens, N2 Gateway (Phase I), Newtown Housing Cooperative and Springfield Terrace, especially where there is no clear distinction in use. With increases in density, parking increases to the point where open space is seriously reduced. Reducing open space and limiting density are feasible alternatives to providing parking.

A layout must achieve an efficient and balanced trade-off between the private and public domains. It is therefore important to attain a balance between public and private areas when planning and designing interior and exterior spaces. Density and efficiency are a factor of the size of the site and the amount of land used for residential and public spaces and facilities, as much as of the layout. The achievable density will depend on the percentage of land used for residential and public spaces, playgrounds, public facilities and recreational spaces.

### 2.2 Medium-density low-rise housing

High-rise buildings are commonly associated with higher densities but careful study reveals that high-density housing does not imply high-rise housing—similar densities can be achieved in three to four-storey walk-ups as in high-rise tower blocks. In the *Ville Radieuse* (*The Radiant City*), Le Corbusier recommends structures of 15 stories and projects a density of 1,000 persons per hectare. In the Organisation of American States publication *Normas Minimas de Urbanizacion y Servicios Publicos* (*Minimum Standards of Urban Design and Public Services*), the Colombian architect German Samper Gnecco develops a low-rise, high-density prototype that also reaches a density of 1,000 persons per hectare but at one and two stories only. Peter Land, in his publication *Economic garden houses: High density development: design, planning, landscape, high-density development*, develops a range of inventive low-rise, high-density schemes, each with extensive private outdoor patio space, which reach densities of up to 600 persons per hectare. These results are achieved with only one to two storeys with parking adjacent to each unit.

Similarly, high quality housing does not imply low-density housing—sprawling RDP housing on the periphery provides fewer opportunities than medium-rise flats near the inner-city. At a certain density, design is an important determinant of the success of a development. The arrangement, views, location, sequence, infrastructure and service provision, open space quality, environmental conditions, and benefits of agglomeration potentially allow a higher-density environment to function better than a poorly designed low-density development, thus directly influencing the quality of housing.
Government policy in the United Kingdom stipulates densities for new homes of 30–50 dwellings per hectare. This figure is higher in urban areas with good public transport links. It is possible to build family houses with gardens at 70 dwellings per hectare. This is not high density, as desirable parts of London, such as Kensington and Chelsea, have in excess of 150 dwellings per hectare and parts of Barcelona and Paris have around 400. The quality of a development has little to do with density and is largely a matter of design and sensitivity to context.

Higher-density housing developments offer many benefits, such as:

- shared services;
- greater support for facilities;
- reduced costs;
- greater land and resource efficiency;
- a greater sense of place;
- better human scale; and
- they support larger dwelling units than the one-house-one-plot approach.

In Missionvale a double-storey fourplex or quad house was the largest and most financially efficient structure at 56m², built with the R15,000 subsidy, compared with a freestanding house of 30m² for the same subsidy amount. Higher-density units in Samora Machel were twice the size (30–32m²) of those on the normal single residential sites of previous subsidy projects in the area. The house type designed for Sakhasonke Village considered the optimal way of creating maximum possible floor space relative to cost by using building materials in their most standard, un-customised form to minimise waste. Grouping units as duplexes or triplexes (46.2m²) meant cost saving due to shared party walls and shared services. Three-metre walkways were provided between rows of sites.

2.3 ‘EcoDensity’

Authorities in Vancouver, Canada, are convinced that density is ecologically responsible and must be actively promoted. The ‘EcoDensity’ initiative promotes high-quality densification as a way to reduce the city’s ecological footprint. Different tools are being developed to manage and measure personal and collective actions in support of a world where human demand does not exceed what nature can supply.

The ecological footprint is a resource management tool that measures how much land and water area a human population requires to produce the resources it consumes and to absorb its wastes under prevailing technology. Ecological footprint accounts allow governments to track a city or region’s demand on natural capital and compare this with the amount of natural capital actually available. By measuring the ecological footprint of a population overshoot can be assessed, aiding the management of ecological assets more carefully.

South Africa’s ecological footprint

Using the increasingly popular quantitative measurement known as ‘ecological footprint’, it has been estimated that South Africa’s footprint is 4.02 hectares per person.

‘Footprinting’ is an accounting tool that measures how much biologically productive land is required to support the living standards of an individual, a city or a country. This includes the land required to produce the physical resources consumed, absorb the wastes generated, and sequester CO₂ emissions associated with energy demand.

Using the World Wildlife Fund (WWF) estimate the that global ‘fair share’ is 1.8 hectares per person if we are all to live within the carrying capacity of the planet’s ecosystems, this means that we would need two planets if everyone lived like the average South African. This, however, masks gross inequalities. A recent study of Cape Town found that the footprint of Cape Town’s middle class suburbs is 5 – 6 planets (similar to the United States average which is 5.2 planets), and the footprint of the poor suburbs is 0.5 to 1 planet (similar to China and India).
Today, humanity’s ecological footprint is over 23% too large for the planet to regenerate. According to the inventor of the concept, Prof William Rees, some of the largest components of the ecological footprint are personal transportation and the construction, maintenance and operation of buildings. Rees compared three forms of city housing: the single-family house, the three-story walk-up, and the high-rise building, and explored how each example affects personal transportation requirements, capacity for public transit and the energy required to build and maintain a household. He found that “moving from single-family to either three-storey walk-up or high-rise resulted in a 40 per cent reduction in that part of the ecological footprint of the household that was related to housing and transportation”.

Todes contests that the prospects for compaction are shaped by forces such as old policies and institutional arrangements that need to be transformed to meet new challenges. She believes that the attitude of local planning authorities (and therefore political will in support of compaction), as well as market forces, the functioning of the urban land market and government’s laissez-faire way of dealing with them, NIMBYism and lifestyle preferences all militate against an “integrative and urbanist version of compaction.”

In light of this, government should be cognisant of the following:

- use of government land for mixed-use higher-density development that serves the public good;
- creation of pedestrian friendly and safe mixed-use environments;
- provision of efficient and integrated public transport systems;
- changes to zoning schemes in order to permit and promote compact, higher-density, mixed-use and cluster development;
- flexibility in municipal infrastructure and service provision standards regarding building setbacks, street widths, parking requirements, single-use zoning; and
- delays with building approvals and negotiating time impact on development costs – officials should aim to minimise the duration of the processing of development applications.

In the absence of good urban management, Acioly and Davidson argue that density is likely to increase in locations where there are high levels of accessibility to employment, services and infrastructure. These areas are also characterised by high land prices. In the absence of alternatives for land and housing, population density will naturally tend to rise through informal increases in either built density or in the occupancy rates of existing buildings. Market distortions, legal frameworks and private sector mobilisation in the real estate market will dictate the extent to which this will occur.

Countries view the efficient use of land as a limited resource in different ways. Differences are particularly stark between market and planned economies.

In market economies, density is predominantly influenced by the market, occasionally with some state regulation and control. The broader social costs, such as the unaffordability of higher-density housing on well-located land and subsequent poor access to urban opportunities and facilities, are not taken into account.

On the other hand, planned economies rigidly apply density standards such as square metres per inhabitant, resulting in adverse urban environments.

“Density outcomes must be economically efficient and reinforce sustainable human development but must be culturally acceptable as well. Density should be the result of a design process through which the designer must deal dynamically with standards, plot and dwelling sizes, housing typology, spatial planning, cultural acceptability and environmental suitability. It should not be the unilateral result of a cost analysis and financial exercise aiming at the optimisation of infrastructure, services and land.”

Acioly and Davidson, 1996:12
Guidelines

- The way in which location and density manifest in urban environments profoundly impacts the form and function of cities.

- Low density generally refers to 40 or less dwellings per hectare (gross), medium density to 40-100 dwellings per hectare (gross) and high density to 100 or more dwellings per hectare (gross).

- Sprawling low-density environments are unable to create thresholds high enough (typically minimum densities of 50 du/ha) to support efficient and viable public transportation and local economic development initiatives. Urban sprawl is unsustainable and results in traffic congestion, air pollution and the loss of rural and primeval land. Further, the travel costs associated with sprawl make this form of urban environment unaffordable to the majority of the population.

- There is a need for compaction in South African settlements as it promotes movement on foot, supports efficient public transport, encourages employment generation and reduces travel time and cost. Therefore, densities should be increased along activity corridors served by reliable and frequent public transport, and employment opportunities and services within walking distance from housing developments. Higher-density housing close to public transport, services and employment can significantly contribute to the reduction of greenhouse gas emissions due to the reduced use of motorised transport. The promotion of high-quality densification is a responsible way to significantly reduce an urban area’s ecological footprint. A family that moves from a single-family dwelling to a high-rise or three-storey walk up results in a 40% reduction in the part of the ecological footprint relating to housing and transportation.

- Increased densities do not necessarily mean the extensive construction of high-rise buildings, but rather higher density environments can be achieved through low-rise medium density housing including attached housing, cluster housing and two-, three-, and four-storey walk up housing. A standard for density must be used to establish new development forms, provide opportunities for a greater variety of residential development options, make available building forms that promote low-rise medium density housing and formulate development strategies that go beyond transport needs.

- The provision of higher-density housing should be part of a mixed-use environment that encompasses a range of housing types and a variety of social, business and commercial uses and opportunities. The promotion of a compact city model, such as this, creates an environment in which levels of social and commercial service are significantly higher and convenience and equity of access are greater.

- Changes in planning legislation, ordinances and zoning schemes, and the land and housing markets should be actively pursued to encourage higher-density mixed-use developments that promote compact urban areas and meet a range of needs. The absence of good urban management and alternatives to the high prices for land and housing will result in informality and vulnerability.
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2. AN INTEGRATED APPROACH TO DEVELOPMENT

The form, nature and content of modern urban environments are shaped by a complex set of social, political and economic factors and human values. Understanding these is one of the most important functions of urban planning where the needs of individual users or citizens have to be balanced not only against the sustainability of the natural environment, but also against private sector objectives and wider community interests. The neo-liberal, free-market approach to urban development undertaken in South Africa obstructs the creation of high quality urban environments as it does not adequately address this complexity. This failure relates especially to policies that address the wider socio-economic dimensions of sustainability and integration principles, particularly those of ecological integrity, equity and participation in decision-making.¹

The case studies presented in this book demonstrate that development is multi-dimensional and complex, and that a multi-sectoral, integrated approach is required to improve the social, economic and physical conditions of poor households, and to further the agenda of sustainable development. An integrated approach to development aims to address all aspects of poverty.

Table 9: Dimensions of poverty²

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>Absence of fair, stable wages; living below stipulated minimum income; no access to credit.</td>
</tr>
<tr>
<td>Environmental</td>
<td>Lack of safe, secure and stable living arrangements; located where access to physical infrastructure including municipal services is either limited, costly or denied; constrained or no access to natural resources.</td>
</tr>
<tr>
<td>Social</td>
<td>Limited or no access to social infrastructure, including education and training and participation in decision making processes; limited or no access to indirect income e.g. social support grants.</td>
</tr>
<tr>
<td>Combination</td>
<td>Several of the above dynamics could combine with others to render a household poor.</td>
</tr>
</tbody>
</table>

Poverty eradication relies on wide-ranging interventions, which are responsive to a range of dynamics, creating opportunities for partnerships between stakeholders. Poor households are important stakeholders and their livelihood strategies need to be considered in planning interventions.³ Livelihoods assessments are valuable tools towards an integrated and holistic understanding of the development challenges of a particular community, and towards establishing suitable development interventions. Households moving into or living in medium-density housing form a community by virtue of physical proximity and functional interrelatedness. This presents ideal opportunities for skills development and local economic development opportunities.

Sakhasonke Village and Carr Gardens reveal the importance of an integrated approach to development, where stakeholders realised that the provision of housing and infrastructure alone would be insufficient to meaningfully improve the lives of lower-income households. The community initiatives, programmes and activities undertaken in partnership with organisations and other communities are key components of the projects’ success. SV CG

Critical to sustainable development is an integrated approach where collaboration between the key actors involved in urban development is encouraged and enabled. These actors include:
- government (with good intergovernmental relations and alignment between national, provincial and local government initiatives and spending);
- interest groups (community-based organisations, environmentalists, cultural heritage groups, economic development agencies);
- broader stakeholders (citizens, business), professionals (planners, architects);
- the development industry (property, land and construction sectors); and
- the formation of public/private partnerships.⁴ STB CG NU SM SV
Interactions between these actors, within the contexts in which they operate, shape the highly political process of planning and development. In this sense, planning is considered as an important process:

“… which both reflect[s] and [has] the potential to shape the building of relations and discourses, the social and intellectual capital, through which links are made between networks to address matters of shared concerns at the level of neighbourhood, towns and urban regions”.

Sustainable and integrated settlements cannot be achieved without the active participation and co-operation of all role players in the urban arena; it is especially reliant on community participation and effective and efficient co-operation between all spheres of government. The provision of higher-density housing on strategically well-located land presents ideal opportunities for achieving integrated development goals and creating sustainable and integrated settlements that enable access to:

- employment and commercial opportunities;
- places of urban opportunity and entertainment;
- education facilities and primary health care;
- access to public transportation and pedestrian friendly environments; and
- environmentally friendly and energy efficient buildings that are conducive to the health of their inhabitants.

Integrated settlements support the building of cohesive communities and enhance the quality of life of households. Integrated settlements should include a mix of housing typologies and tenures, incomes and social and age groups that enable social inclusion. By combining a mix of incomes, a variety of housing options and good facility standards, the stigma attached to higher-density environments can be mitigated.

However, urban integration is not a ‘magical end-state’ that will be achieved easily. It must be regarded as a
prospect to move towards through purposeful actions that produce increasingly more equitable results. In a democratic dispensation, where grassroots participation is the order of the day, the achievement of integration is rooted in the rights and protection of the interests of marginalised communities.

In terms of Section 9(1) of the National Housing Act, Act 107 of 1997, municipalities are obliged, as part of the process of integrated development planning, to take all reasonable and necessary steps to ensure that inhabitants have access to adequate housing on a progressive basis, by setting housing delivery goals, identifying suitable land for housing development and planning, facilitating, initiating and co-ordinating housing development in their area of jurisdiction.

In terms of the revised procedures established in Chapter 3 of Part 3 of the National Housing Code, municipalities are responsible for identifying land suitable for housing development and for making applications for housing subsidies. Central to this process is the development of a multi-year Municipal Housing Plan as part of an approved Integrated Development Plan (IDP). However, despite these policy imperatives, South African cities are still fragmented, segregated and unequal. Pieterse delineates five reasons why it has been so difficult to shift the patterns of fragmentation and inequality in South African cities. These include:

- the protracted restructuring of local government;
- confusion generated by the contradictory implications of sectoral policy initiatives;
- political pressure to achieve quantitative targets;
- the lack of understanding and engagement with urban economic processes and actors; and
- the adoption of a consensual model to the politics of urban development policy frameworks and implementation.

Pieterse further states that consensus politics, policies and decisions are guided by the consensus reached between diverse groups rather than by values and principles of the ruling party or the majority. This is sometimes thought of as a win-win situation, but it can create losers as it changes priorities and in South Africa, the priorities have shifted away from the needs of the poor. This model assumes that diverse stakeholders (e.g. rich and poor) will be able to find agreement through deliberation on, for example, the
necessity of making cities that are spatially and socio-economically integrated, free of discrimination and segregation. Since such consensus has not been reached our cities continue to be segregated and lack integration with the poorest citizens paying the highest price. As long as the contradictions between competing classes and competing interests are not acknowledged and addressed, consensus politics will limit the impact on government policy. Without sound and integrated planning and management, and the provision of financially and socially sustainable housing, cities will become sources of severe social, health, environmental and economic problems.

Local government plays a critical role in achieving urban integration through the way it uses its resources and power to determine the urban system. The case studies present different perspectives of the role government has played (especially local government) in either enabling or impeding development and implementation of medium-density projects.

Perhaps the most striking example of government’s role in frustrating overall sustainability is the Stock Road project. An urban system that functions optimally in terms of meeting the needs of the poor invariably has to embrace a multi-sectoral approach and commit to positive impacts at various scales, but especially at the local level. It is critical that Integrated Development Plans (IDPs) display an understanding of politics, political accountability frameworks and institutional effectiveness. Municipalities are obliged to formulate IDPs through participatory democratic processes and incorporate political agreements about which urban challenges and needs are most urgent and how best to address them; this, in the context of limited resources and competing needs, and the necessity to realise citizens’ socio-economic rights, especially those of the vulnerable and marginalised. Theoretically, IDPs provide an ideal platform to advance greater urban integration. But the way in which numerous poor communities have to confront the symptoms of fragmentation are physical manifestations of the sectoral approach of local government departments. According to Pieterse:

“… the power of the IDP is that it reflects the sum-total of sectoral and multi-sectoral strategies and more importantly, the argument for how these strategies address the priorities of the city, as defined through participatory democratic processes. Of course, if the democratic institutions and forums are weak it is highly unlikely that the IDP will indeed be a force for realising urban integration. What this implies is that the champions of radical democracy and social justice in civil society and the state need to hold a comprehensive understanding of the various elements that comprise urban integration (…) and how they need to be related and aligned in the specific circumstances of the city where they find themselves. Thereafter the trick is to ensure that the IDP priorities, which inform the allocation of resources, are consistent with their understanding”.

Pieterse summarises dimensions of urban integration policies as follows, but states that these categories are not “iron-clad”:

<table>
<thead>
<tr>
<th>Table 10: Dimensions of urban integration policies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sectoral</strong></td>
</tr>
<tr>
<td>• Housing and land</td>
</tr>
<tr>
<td>• Infrastructure: water, sewerage, electricity</td>
</tr>
<tr>
<td>• Health</td>
</tr>
<tr>
<td>• Education</td>
</tr>
<tr>
<td>• Transport</td>
</tr>
<tr>
<td>• Community services: libraries, parks, open spaces, recreational and civic spaces</td>
</tr>
</tbody>
</table>
National and provincial government are increasingly realising the importance of local government as a logical point of co-ordination and an essential means for the implementation of policies and programmes. It is important that national and provincial departments engage municipalities on the content of their IDPs. BNG calls for increased inter-and intra-governmental co-ordination. Three specific interventions are proposed in this regard:\(^{13}\)

1. **Integrated development and budget planning** — Integrated development planning instruments, provincial housing development plans and the national housing development plan must be consolidated and simplified, where necessary, to promote integrated delivery, coordinated funding prioritisation (including the Municipal Infrastructure Grant) and target delivery to meet the unique sets of challenges faced by municipalities and provinces.

2. **Intergovernmental co-ordination** — Greater co-operation and information sharing between the National Department of Housing and municipal government is needed, particularly the nine metropolitan local governments, especially with regard to the accreditation of municipalities.

3. **Bilateral co-operation** — In the short term, the current co-operation between the Provincial Department of Local Government and Housing, the Social Cluster partner departments and other spheres of government, particularly municipalities, needs to be deepened.

The participation of national and provincial sector departments in municipal IDP reviews is a cornerstone of integrated planning. Municipalities are dependent on information about sector expenditure plans that have costs for municipalities or require technical assistance from departments. In practice, however, participation has been weak:\(^{14}\)

> "The underlying principle of integrated development planning across spheres is that it must be a dialogue between spheres. National priorities are influenced and shaped by the articulation by communities of their needs through the municipal integrated planning process. A cabinet Lekgotla in July 2001 resolved that national and provincial government should plan and budget around local needs as a matter of principle. In December 2001 the PCC articulated this principle as follows: in a system of state-wide planning, municipal integrated development plans (IDPs) must serve as the basis for aligning the policies, planning and budgeting of all three spheres. IDPs are thus seen as an intergovernmental planning instrument for the whole of government."

According to *Isidima*, the Western Cape Sustainable Human Settlement Strategy, the main factors enabling integration of a range of programmes in integrated projects are, firstly, the availability of linked funding for a range of interventions in different sectors, and, secondly, co-operation between a range of stakeholders. This co-operation includes the involvement of more than one sphere of government, a number of different line departments, various NGOs and a relatively inter-disciplinary style of project management.

Integrated development is very resource-intensive and requires both high levels of technical expertise and high levels of co-ordination with other actors in the process. The institutional arrangements for managing integrated development projects are crucial. There is a range of models, such as the independent agency model, used by the Cato Manor Development Association in the Cato Manor Development Project in Durban; there is also the inter-sectoral team located within government, such as the unit managing the Alexandra Urban Renewal Project in Johannesburg. Sakhasonke Village, Carr Gardens and the Newtown Housing Co-operative all display high levels of co-operation between various stakeholders, not only from an implementation point of view, but also post-occupation in the form of capacity development support. On a smaller scale, projects such as Sakhasonke Village have attempted an integrated approach that addresses the needs of the community, based on an understanding of livelihoods within that specific community. This bottom-up approach to integrated development is intensive and requires the co-ordination of a range of role players. High levels of empowerment of beneficiaries are necessary as a wider range of issues than just housing need to be addressed.
Rust\textsuperscript{15} aptly states that:

\begin{quote}
\textit{“… an acceptance of a wider housing definition might also suggest that the housing responsibility for the country falls more broadly within the ambit of a number of departments, and not just housing, for instance, the active participation of the National Treasury might be considered in matters relating to the performance of the housing market. The active participation of the Department of Trade and Industry might be considered in matters relating to the performance and engagement of the construction industry. These issues should be given greater attention at a Cabinet level to ensure that the breadth of the housing environment is given attention by the State”}.
\end{quote}

The current practice of housing investment being considered primarily within a particular department’s budget should be discouraged. A wider analysis of the public finance effects is required, which includes different levels of government, particularly provincial and local, as well as different departments.\textsuperscript{16} Isidima emphasises the need for the alignment of plans and policies between all spheres and sectors of government.

Central at the activity level is the implementation of the housing chapters in the IDPs. These chapters need to be informed by spatial and land use planning, to determine matters such as residential densities and locations of higher-density development. Better use should be made of IDPs to improve understanding of the nature of the needs, to introduce housing instruments that fit community profiles and for monitoring and evaluation.
Guidelines

• The development of higher-density housing should form part of an integrated approach to sustainable human settlement development.

• Poverty is multi-dimensional and complex, and a multi-sectoral and integrated approach is required to address its social, economic and physical impacts on poor households. The provision of housing and infrastructure alone are insufficient to improve the lives of lower-income households meaningfully. Community initiatives, programmes and activities undertaken in partnership with organisations, other communities and government are key components in an integrated approach to the development of sustainable human settlements.

• Integrated settlements, containing a mix of housing typologies and tenures, incomes and social and age groups that enable social inclusion, should be promoted in order to remove the stigma associated with higher-density housing environments.

• High-quality inter-governmental relations, collaboration and partnerships between different role players, especially local government, as well as active civil society participation in processes such as the formulation of municipal IDPs and participatory budgeting, should underpin effective integrated urban development.

• The bottom-up approach to integrated development is very resource-intensive and requires both high levels of technical expertise and high levels of co-ordination with all role-players in the process. The housing responsibility for the country falls within the ambit of a number of government departments, and not just housing. Institutional arrangements for managing integrated development projects are therefore critical, and the empowerment of beneficiaries should be promoted.
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3. AFFORDABILITY OF HOUSING AND SERVICES

This section draws mainly on general findings based on the case studies and is to a lesser extent based on theoretical considerations pertaining to affordability. It should be read in conjunction with the case studies.

When applied to housing, affordability generally refers to the ability to purchase goods or a service on a sustained basis (including consideration of both the initial capital costs and the cost of ongoing maintenance and operation) without compromising other demands on financial resources. It also refers to the ability of the public sector and institutions responsible for the management of housing developments to provide facilities and maintenance of services on an on-going basis within their budgetary limitations. Although it is not possible to accurately model the wide range of factors affecting housing affordability, together with security of tenure and livelihood considerations, affordability is a central focus of the economic and social sustainability pillars. It is a multi-faceted and complex crosscutting issue that impacts on and is impacted upon by a wide range of factors, ultimately influencing overall sustainability of neighbourhoods, settlements and cities. These issues range from design and infrastructure, planning regulations, density, location, community participation and social capital formation, to institutional arrangements, tenure and partnerships.

Central to housing affordability is the issue of poverty, especially in a developing country like South Africa. The Constitution of the Republic of South Africa (No.108 of 1996) creates an imperative to provide housing for the poor; it states:

1. Everyone has the right to have access to adequate housing.
2. The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right.
3. No one may be evicted from their home, or have their home demolished, without an order of court made after considering all the relevant circumstances. No legislation may permit arbitrary evictions.

Adebayo and Adebayo fittingly summarise constraints in improving housing for the lowest income groups:

“Affordability is at the heart of households’ efforts to improve their housing situation. It has been widely recognised that employment, income generation and access to housing are highly interrelated. In South Africa, the poor’s incomes have continued to be too meagre or unstable to permit commitment of scarce resources to housing. This scenario becomes more manifest in situations of poor health perpetrated by incidences of AIDS, tuberculosis, malaria, etc, and in addition, other illnesses caused or exacerbated by the poor’s living environments, all of which impact profoundly upon household economies due to increased health expenditure. Improvement of housing then becomes well nigh impossible, affecting directly the performance of housing policy. Further, the configuration of housing, spatial organization and grouping has been inappropriately translated into the built environment, resulting in a lack of interrelationship between the people and socio-cultural and economic aspects, and creating rigid, monotonous housing environments.”

Adebayo A and P Adebayo 2000:1

Affordability is thus an important criterion for the delivery of housing, with far-reaching implications in the planning and implementation of public sector housing initiatives. To achieve the above, there are three main sources of finance for housing, which, when combined, create potential affordability for at least a minimum standard house; these sources are:

• state subsidies in the form of capital contributions towards the cost of a defined minimum standard of accommodation;
• a range of commercially available credit products; and
• household contributions in the form of monetary or personal investment in managing or building accommodation.
Adequate means to pay for all monthly housing-related costs and be able to sustain its livelihood are also needed. The sale of subsidised freestanding units (so-called ‘matchboxes’, ‘uno’s’ or ‘izinyawo’s’) found on the periphery of many South African cities or towns is a well-known phenomenon, often motivated by unaffordability, the need for surplus income and dissatisfaction with the overall housing environment.

Beneficiary households (owners) do not know the value of their housing units and therefore do not recognise it and the overall housing environment as an asset. If they knew the value of their units, they would be less likely to sell or to rent for less than market value.

1. Household income

Household income is the first issue that determines a household’s affordability level. According to research by the Housing Finance Resource Programme, the South African housing market can be divided into eight (non-static) ‘sub-markets’. These are defined by the ways in which different income groups are able or unable to combine subsidies, credit and their own contributions to afford housing. The figure below captures the proportion of South African households each sub-market represents and sets out general levels of housing affordability:

The figure illustrates that approximately 79% of all households fall into the fully-subsidised housing market (household incomes of less than R3,500 per month), 11% earn between R3,500 and R7,500, while 38% earn no wage income. According to Rust, current housing supply across the entire housing market is inadequate and is unlikely to support the affordability thresholds of many of the ‘sub-markets’.

Housing affordability is therefore very low, with approximately 90% of the population unable to afford housing costing more than R190,000 and as much as 63% of the population being dependent on the state subsidy. The model suggests that affordability is influenced by the availability of the housing subsidy and housing finance, as well as the availability of housing stock to purchase. The most important issue contributing to the housing situation in South Africa is that the housing market does not perform as a single market with a range of housing options available to all income levels.
2. Monitoring the entire housing market

The primary, secondary and informal markets are linked, with dynamics in one market affecting the others. The implementation of the subsidy constrained the development of the secondary market, undermining the potential of low-cost housing as an asset. Competition in the low-cost housing finance market is critical, especially through the development of savings products and second and third tier institutions to fill market gaps.\(^8\)

Rust recommends that government accepts responsibility for the performance of the entire housing market and expedites and streamlines housing development functions, in higher-income developments as well. She argues that the entire market is relevant to government's goal of addressing the needs of the poor. Supply constraints and increased demand lead to continually increasing property prices, which also occur at the lower end of the market, thus further excluding the poor.\(^9\) In this regard, barriers and enablers influencing housing demand and supply in all sub-markets must be monitored and addressed. Government should rectify blockages that undermine a functioning market. Attention inevitably then needs to be drawn to the importance of government intervention in housing and land markets to achieve desirable outcomes. Biermann\(^10\) points out that if cost is not a central part of the densification argument, the gap will not be breached between policy objectives for integration through densification and the reality of sprawling peripheral developments.

Government subsidisation of infrastructure and facilities and a contribution to providing a basic housing unit are essential, but all spheres of government need a keen understanding of the socio-economic profile of the target market of their policies and frameworks. For households with low, irregular or unstable incomes, adequate housing needs to be affordable and short-term cost benefits should not outweigh long-term costs – a free house does not necessarily imply a product that is affordable in the longer term.

3. An integrated approach to affordable housing

The main intention of the Samora Machel housing project was to provide a serviced site and a simple, small, formal ‘starter’ house of minimum 27m² that would be easily extendable afterwards by beneficiaries as resources permitted. Due to very low monthly household incomes and a reported lack of space on the site, only 15% of interviewed households made improvements to their housing and only 10% added an additional room.\(^6\)M

Key to household affordability is an integrated approach to human settlement development where access to urban opportunities, public transport, education and health, sustainable livelihood activities and other essential life-enhancing elements are accessible to the household, without incurring unreasonably high costs.

Johannesburg Housing Company (JHC) emphasised the importance of the triple bottom-line in housing provision: attention to the main issues that affect sustainability, namely environmental, social (institutional) and financial issues. If these three are balanced, long-term project operating and running costs are lowered. The company argues that housing institutions should balance parallel concerns of social responsibility and long-term financial sustainability; they should also invest in the social and economic empowerment of tenants through various training and support programmes. Human settlement projects should contribute to both the economic and social empowerment of lower income households.\(^{5G}\)

In her presentation Supporting the housing asset triangle: South Africa’s real housing challenge\(^11\) Rust asserts that 86% of South African households cannot afford the mortgage repayments for a R200,000 house, and that 53% of households in the Financial Sector Charter target market are ineligible for mortgage finance,
with a further 20% being too poor. She unpacks the value of housing as social, financial and economic assets. A house as a social asset is a free place to stay, a social safety net and an important component in building citizenship. As an economic asset, housing provides an income to small-scale landlords (generating R421 million per month) and supports home based enterprises (generating approximately R476 million per month). However, over time, housing has the potential to become a financial asset, and if the entirety of the housing asset triangle is realised, housing, and not just title, can alleviate poverty.

4. Participation, capacity development and institutional arrangement

Resident participation, capacity development and institutional arrangement are at the heart of financial and economic sustainability. The majority of the case studies confirmed that ongoing, regular and clear communication between developer or managing institution and the community, and capacity development of residents are at the root of avoiding misunderstandings and unmet expectations, especially regarding financial information. Housing is about more than access to a housing unit — housing institutions, management bodies and government should collaborate with legitimate community leadership structures and initiate and support community development programmes and projects to enable social capital formation. Johannesburg Housing Company emphasises how important it is for the housing provider to understand tenants’ needs in order to develop what the market requires. The Carr Gardens and Sakhasonke Village projects demonstrate how partnerships with NGOs, government and the private sector that address livelihoods issues through initiatives such as community gardening, HIV/AIDS programmes and support activities around homework and sport encourage residents to value their housing environment in its totality, thereby increasing its social and economic asset value.

Active and trained tenant committees and housing supervisors in each JHC building ensure customer satisfaction and communication between residents and the company. Through capacity development, residents are made aware of and understand their tenure rights and responsibilities.

The financial sustainability of the Newtown Housing Co-operative was jeopardised because members were unclear about the terms of the loan and their responsibility in repaying it. It is important that co-operative members understand that after the loan has been paid off, they are still obliged to pay monthly service charges towards the running of the co-operative. A third of members did not know that their tenure was co-operative ownership. This had serious implications for the co-operative’s financial and institutional sustainability.

The residents’ long-term empowerment in understanding and exercising their housing rights and responsibilities has been a challenge for the co-operative and COPE. The project illustrated the importance of a savings club to demonstrate members’ ability to pay monthly charges and ensure that they have the required equity. COPE staff asserted that a lack of financial sustainability had to do with members prioritising household expenditure, as well as ‘a way of living’ — tenants tended to buy luxury goods instead of paying their service charges. Ongoing training and capacity development have proven to be effective in helping residents prioritise payment for housing and contribute actively in their immediate housing environment. Risk management strategies devised by COPE make provision for times of hardship.

Research by the Social Housing Foundation on six hostel redevelopments confirms that the better residents are organised and capacitated, the greater the positive effect on the hostel’s transformation, especially if a well-functioning resident organisation is present early in the planning stages. Sustainability issues such as crime prevention, rent collection and resident behaviour are affected positively by a well-organised, democratically elected and transparent resident’s committee with sufficient skills and knowledge. Interestingly, crime and non-payment of rent threatened sustainability in the two case studies where resident
organisation was the weakest. Institutional management should be the responsibility of appropriately skilled individuals with a commitment to service excellence, whether body corporate, management institution or project committee. The provision of a leadership-training programme for committee members and community leaders is as important as resident and consumer education. Strong and informed leadership plays an important role in ensuring sustainable communities and strengthens the capacity of leaders or community based organisations to use management systems effectively.

The chairperson of the best performing body corporate of the Springfield Terrace project ascribes its financial sustainability to close and diligent management of income and expenditure, transparency, commitment to the community and unity and trust among members. Related to this is management’s ability to respond to problems in a timely manner. Active community participation in the initial stages of the project supports the achievement of design elements that meet end-user requirements, making the housing more acceptable and saleable, and often prevents costly changes and additions later. In the Vitas project, lack of resident control and community participation and development were seen to be central to the development’s failure. Sakhasonke Village is an example where leadership which is responsive to community needs can play a significant role through local economic development initiatives, skills training and other community initiatives that affect sustainability.

Through capacity development and participation, residents become aware of the benefits of living in medium-density housing on well-located land, such as lower monthly transport costs, access to urban opportunities and facilities, and increased safety and security, in spite of higher monthly rentals.

Matching the tenure type, paying ability, affordability levels (socio-economic profile) and needs of target households with the housing product and overall settlement environment is an overriding factor when it comes to affordability. Jackson recommends that research in urban economics, especially consumer preference and demand analysis, will assist policy makers in longer-term decisions. Equally important, the type of tenure must be appropriate to the income of residents; residents earning below R2,500 per month (approximately 70% of the South African population) are unable to afford social rental housing.

Arrangements such as instalment sale and sectional title are inappropriate in the absence of substantial capacity development, especially given misunderstandings with regard to savings, instalment amounts and the functioning of bodies corporate. Government needs to prioritise the provision of well-located public rental housing in order to keep rentals as low as possible. It is evident that the housing provided to residents of the Stock Road and N2 Gateway (Phase 1) project was inappropriate for the affordability levels of the target market. According to the Cape Town Community Housing Company’s (CTCHC) profile, they targeted the ‘gap market’ earning between R3,500 and R7,500 per month. However, to qualify for the institutional subsidy, beneficiaries have to earn less than R3,500. This is contradictory and has serious implications for affordability and the sustainability of the project. It is unclear why the company continued to provide social housing for beneficiaries who cannot afford it. Two-thirds of households interviewed had monthly incomes below R2,500 per month, with only 17.5% earning more than that, which is the affordability benchmark for institutional housing. This corresponded with the 17.5% of residents who thought that it was affordable to live in the units. With 80% of interviewed households headed by single persons, receiving pensions and/or social welfare grants, other forms of social, public rental or RDP housing would have been more appropriate. In addition, the high monthly transport and housing maintenance costs makes living in these units unaffordable for the tenants. High expenditure related to the installation of a ceiling, internal plastering and painting by beneficiaries themselves made it difficult for them to keep their properties in good condition. The instalment sale purchase was unsuitable, especially given the lack of clear communication, community capacity development and participation and consequent misunderstandings with regard to savings and instalment amounts. Due to the low literacy levels of tenants and the language barrier, contracts, concepts and scale models were particularly difficult to understand and required significantly more guidance from the CTCHC. The introduction of the affordability programme by the CTCHC was an innovative way of dealing with the problem of high monthly instalments, but affordability levels should have been established prior to the recruitment of beneficiaries.
5. Local economic development and a livelihood approach to development

In the Sakhasonke Village community, unemployment is high and income and literacy levels are low. The livelihood approach to development took the form of business and other training and trading space for micro enterprises, a community centre provided as part of the project, training in home-based care and a food garden. Supplementing household income and reducing household vulnerability is paramount to the development of sustainable human settlements. Livelihood assessments should be undertaken when there is an identified community. Sub-letting becomes an economic necessity in cases where households cannot afford monthly payments, with overcrowding posing serious health and safety risks in many cases.

Local economic development opportunities and entrepreneurship should be supported and promoted in projects through the involvement of residents in the sub-contracting of the project’s cleaning, maintenance, refuse removal and gardening services. Both Sakhasonke Village and Newtown Housing Co-operative successfully employ residents in this way. The co-operative responsible for maintaining the verges and grass of communal areas and of individual households in Sakhasonke demonstrates concerted community efforts to simultaneously create employment and invest in their housing environment, supporting overall sustainability.

The lack of any concurrent programmes of local economic development has contributed to the failure of Vitas in the Philippines, while employment opportunities for residents have not improved through their relocation. In Missionvale, ‘social reconstruction’ and social sustainability were hardly achieved due to the absence of sustained and significant social and human capital formation post-implementation, coupled with an absence of strong community leadership structures. Skills transfer and creation of jobs as envisaged initially did not translate into a substantial improvement of livelihoods in the area. The inaccessibility of formal commercial opportunities and unemployment levels of nearly 40% meant that the incorporation of informal trading space and support for micro enterprises should have received attention in the design of this low-cost housing project.

Support of local economic development initiatives is essential and a livelihoods approach to development would have been a useful tool to ascertain the level and type of assistance and intervention needed.

6. Location

Locating medium-density housing close to public transport nodes/corridors, employment and other urban and social opportunities minimises time and monetary cost and increases the attractiveness of the housing option, thereby providing an incentive for households for the financial upkeep of their housing. Sakhasonke Village is on relatively well-located land in close proximity to an informal settlement and a ‘middle class’ suburb, integrating the poor with the existing urban environment. This contributes to the overall satisfaction of residents who, unlike many recipients of subsidised housing on the outskirts of urban areas, do not report experiencing a feeling of ‘being trapped in space’ or ‘left on their own’.

The Springfield Terrace project demonstrated how, through stimulating development on a well-located parcel of land, lower-income households could afford to increase their choice of housing and have access
to the full range of urban opportunities. Mechanisms to achieve this included increased densities that decreased the unit cost of land; direct subsidies of interest and redemption rates; and government’s contribution of land at nominal value. The benefits of developing on government land, coupled with the cost advantage of higher housing density were evident in the larger top-structures being provided in the Missionvale project.

7. Supportive, timeous planning and delivery

A supportive planning environment is vital for the sustainability and restructuring of South African cities and society. Unfortunately, development time and costs are often increased by municipal inefficiencies and their failure to perform standard tasks. Municipal processes and negotiations related to housing should be expedited and streamlined. Inefficient procedures for rezoning, building plans and subdivision influence the viability of projects, while delays in transferring title deeds undermine the secondary housing market.

The Springfield Terrace and Stock Road projects both demonstrated how local authority delays in approval processes and procedures incurred excessively high costs. Just under two years lapsed between plan submission and approval for Springfield Terrace, with escalation on the cost items of the final contract, while Stock Road residents were not yet in possession of title deeds four years after completion of the project. The Stock Road project illustrates how financial sustainability is severely affected by social, institutional and technical sustainability problems and irregularities, especially relating to government and housing institutions.

8. Density, cost effectiveness and incentives

In a document entitled Facts about affordable and high-density housing the authors posit that the maxim “high-density housing is affordable housing and affordable housing is high-density housing” is a myth. The fact is that not all higher-density housing is affordable to low-income families. However, the myth expresses an essential truth that more units per hectare imply lower land costs per unit, if local governments allow additional concessions, programmes and significant density bonuses.
Waverley Council (Australia) offered a density bonus to developers who provided affordable housing as part of their private residential development. A 34.5% bonus to floor space ratio was provided in return for one one-bedroom unit to be included and to remain as affordable housing in perpetuity; and another with its rent capped for five years. Title for the former was transferred to the council, while title for the latter remains with the developer or private owner. The title and rental capping benefit was valued at 51% of the bonus so that the value of the bonus was shared equally between the developer and the community. The affordable housing was managed by a community housing association; a mutually beneficial arrangement for council, developer and community.15

Metroplan Town and Regional Planners, responsible for the planning, design and project management of both the Missionvale and Sakhasoneke projects, developed a comparative analysis between low-density and medium-density scenarios for the development of Sakhasoneke Village which clearly demonstrates the cost-effectiveness of the medium-density housing option.16

**Table 11: Vital statistics: Comparison between low- and medium-density scenarios**

<table>
<thead>
<tr>
<th></th>
<th>Low-density scenario</th>
<th>Medium-density scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of settlement (m²)</td>
<td>4,4900</td>
<td>4,4900</td>
</tr>
<tr>
<td>Residential area (nett)</td>
<td>27,185</td>
<td>24,629</td>
</tr>
<tr>
<td>Number of units</td>
<td>126</td>
<td>337</td>
</tr>
<tr>
<td>Average erf size (m²)</td>
<td>216</td>
<td>73</td>
</tr>
<tr>
<td>Gross density</td>
<td>28</td>
<td>75</td>
</tr>
<tr>
<td>Nett density</td>
<td>46</td>
<td>137</td>
</tr>
<tr>
<td>Average unit area</td>
<td>40</td>
<td>46</td>
</tr>
<tr>
<td>Coverage</td>
<td>19</td>
<td>31</td>
</tr>
<tr>
<td>Population potential at five persons per household</td>
<td>630</td>
<td>1,685</td>
</tr>
</tbody>
</table>

**Table 12: Project costs - Sakhasoneke Village**

<table>
<thead>
<tr>
<th></th>
<th>Low density</th>
<th>Medium density</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional fees</td>
<td>1,000.00</td>
<td>1,000.00</td>
<td>0% Saving</td>
</tr>
<tr>
<td>Land cost/erf (R3.00/M²)</td>
<td>687.00</td>
<td>219.00</td>
<td>68% Saving on land cost</td>
</tr>
<tr>
<td>Services</td>
<td>8,000.00</td>
<td>6,000.00</td>
<td>25% Saving on services</td>
</tr>
<tr>
<td>Top structure</td>
<td>18,400.00</td>
<td>19,222.00</td>
<td></td>
</tr>
<tr>
<td>Area of structure</td>
<td>40.00</td>
<td>46.00</td>
<td>13% Increase in floor area</td>
</tr>
<tr>
<td>Building cost/m</td>
<td>460.00</td>
<td>420.00</td>
<td>9% Saving on building cost</td>
</tr>
<tr>
<td>Cost other</td>
<td>1,500.00</td>
<td>1,500.00</td>
<td>0% Saving</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29,587.00</td>
<td>27,941.00</td>
<td></td>
</tr>
<tr>
<td>PHP subsidy</td>
<td>26,662.00</td>
<td>27,941.00</td>
<td></td>
</tr>
<tr>
<td>Shortfall</td>
<td>2,925.00</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

Low density house should be 34m²
Table 13: Building costs - Sakhasonke Village

<table>
<thead>
<tr>
<th>Material</th>
<th>40m²</th>
<th>46m²</th>
<th>Cost difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete slab</td>
<td>3,946.00</td>
<td>2,368.00</td>
<td></td>
</tr>
<tr>
<td>Wooden deck and staircase</td>
<td>0.00</td>
<td>2,551.00</td>
<td></td>
</tr>
<tr>
<td>Labour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete slab</td>
<td>1,083.00</td>
<td>650.00</td>
<td></td>
</tr>
<tr>
<td>Wooden deck and staircase</td>
<td>0.00</td>
<td>500.00</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>5,029.00</td>
<td>6,069.00</td>
<td>-1,040</td>
</tr>
<tr>
<td>Rate</td>
<td>125.73</td>
<td>126.44</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External plaster</td>
<td>341.00</td>
<td>352.00</td>
<td>-29.00</td>
</tr>
<tr>
<td>Labour</td>
<td>585.00</td>
<td>603.00</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>926</td>
<td>955.00</td>
<td>-29.00</td>
</tr>
</tbody>
</table>

Table 14: Cumulative savings - Sakhasonke Village

- Services: 2,000.00
- Top structure: 1,730.00
- TOTAL: 3,730.00

In the case of Sakhasonke Village, the use of a relatively small portion of land was maximised through higher-density housing. The fundamental consideration for the development was increased dwelling unit density in order to reduce land and service cost, to maximise the number of dwelling units provided and increase house size, creating a dignified and compact urban environment that contributed to integration and the responsible use of a scarce resource.

Metroplan summarises the advantages and disadvantages resulting from the comparison between low- and higher-density housing in the following table:

Table 15: Comparison between low- and higher-density housing

<table>
<thead>
<tr>
<th></th>
<th>Low density</th>
<th>Medium density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension of home</td>
<td>Possible up to average 60m² and more</td>
<td>Limited to a maximum of 24m²</td>
</tr>
<tr>
<td>Vehicle on site</td>
<td>Possible in all cases</td>
<td>Possible in limited cases</td>
</tr>
<tr>
<td>Initial house size</td>
<td>35m²</td>
<td>46m²</td>
</tr>
<tr>
<td>Surveillance/security</td>
<td>Single storey – poor surveillance and security</td>
<td>Double storey – good surveillance and security</td>
</tr>
<tr>
<td>Sense of public space</td>
<td>Poor</td>
<td>Better potential</td>
</tr>
<tr>
<td>Maintenance of public areas</td>
<td>More costly</td>
<td>Less costly</td>
</tr>
<tr>
<td>Infrastructural costs</td>
<td>Less cost effective</td>
<td>More cost effective</td>
</tr>
<tr>
<td>Design issues</td>
<td>Requires less design input</td>
<td>Requires more design input</td>
</tr>
<tr>
<td>Contribution to urban sprawl</td>
<td>More</td>
<td>Less</td>
</tr>
<tr>
<td>Locational advantage</td>
<td>Fewer persons closer to employment</td>
<td>More persons closer to employment</td>
</tr>
<tr>
<td>Walking distance to schools etc.</td>
<td>Poor</td>
<td>Good</td>
</tr>
<tr>
<td>Public transport viability/sustainability</td>
<td>Low population concentrations – poor viability and sustainability</td>
<td>High population concentrations – viable and sustainable</td>
</tr>
<tr>
<td>Effect on bulk services</td>
<td>Poor pro rata sharing</td>
<td>Better pro rata sharing</td>
</tr>
<tr>
<td>Subsidy utilisation</td>
<td>Less efficient</td>
<td>More efficient</td>
</tr>
<tr>
<td>Sense of place</td>
<td>Difficult to create</td>
<td>Easier to create</td>
</tr>
<tr>
<td>City integration potential</td>
<td>Poor</td>
<td>Good</td>
</tr>
<tr>
<td>Consistency with overall planning policy</td>
<td>Poor</td>
<td>Good</td>
</tr>
</tbody>
</table>
According to Acioly and Davidson, one of the main arguments for encouraging higher densities is the efficient provision and maintenance of infrastructure. Low-density leads to long infrastructure runs and therefore higher costs per consumer for both installation and operation. Experiences with shallow sewerage in northeast Brazil demonstrate relationships between population density and optimal costs in the cost of sewerage networks. Evaluations of the system showed a noticeable reduction in costs per household as density increased. At densities above 160 persons/ha, annual cost per household falls below US$48.

High population density means a high level of business access, both to employees and to markets. Higher accessibility for workers and enterprises means more competition and productivity, with less energy and time consumption. However, if an increase in density is unplanned or badly managed, it could lead to overload of infrastructure, resulting in poor functioning and inefficiencies.

‘Internal’ services for higher-density developments are often more expensive than for lower density developments as they have to accommodate greater loads. However, the sharing of costs between more residents results in lower service costs.

Behrens and Watson illustrate the effect of increasing gross residential densities on the capital cost of service provision. For almost all services the capital costs decrease as density increases, especially at gross residential densities of 50 du/ha. In Latin American countries, densities of 60–120 du/ha (approximately 300–600 people per hectare) generate the cheapest per capita infrastructure costs, while still creating an acceptable housing environment. Infrastructure costs per capita at a density of 75 people per ha (± 20 du/ha) are more than three times higher than densities at 300 people per hectare (±75 du/ha). When comparing different types of public lighting, the relative cost (capital, maintenance and energy) per erf for housing at 111 du/ha is reduced by approximately a third of that for housing environments of 36 du/ha. High density generally allows for more efficient provision of infrastructure as the network lengths per unit served decrease and more people have access to public services.

9. Partnerships

JHC serves as one of the most successful examples of partnership formation in financing social housing. Partners in the largest social housing project in the country included Absa Bank, the National Housing Finance Corporation, the Gauteng Partnership Fund, Anglo American Corporation, AngloGold Ashanti and ApexHi, as well as the Gauteng Department of Housing. The experimental Missionvale project...
demonstrated how the formation of a partnership between public and private key stakeholders and the community contributed to the introduction of innovative planning, engineering and housing standards and methods of project implementation. Moreover, interaction between housing components such as planning, engineering, land registration and financing saved costs. Economies of scale took effect, with more money available for the housing structure and a reduction in building costs. On the other hand, the N2 Gateway (Phase 1) stands as an example of the breakdown in partnerships.

Adequate funding emanating from multiple sources for development, including significant contributions from government, coupled with adequately capacitated and trained residents ensured the sustainability of the Washington Heights project. The GMSA Foundation and its partners initiated the Sakhasoneke Village and Missionvale projects to promote innovative housing developments using the government subsidy. The success of Sakhasoneke Village is rooted in further partnerships between the community, Metroplan, government, tertiary education institutions, NGOs and other organisations.

Springfield Terrace demonstrated the important role the local authority plays in mobilising private sector capital. The partnership demonstrated how even a relatively small consolidation of public and private land could be used to extend the impact of a housing project.

Financial partnerships again proved vital in the case of Newtown Housing Co-operative where nearly 75% of total costs were covered by additional funding to the national government subsidy. In Gauteng, initiatives such as the Gauteng Partnership Fund are a strategic response to the funding shortcomings experienced by the social housing sector. They attract private sector finance by enabling social housing institutions to obtain financing on favourable terms for people in the low and middle-income market. The scheme provides banks and other financial institutions with a form of security that will make it easier to facilitate financial assistance for projects in the low- to middle-income bracket, leveraging funding and joint venture agreements.

Strong partnerships between the public, private and non-profit sectors have enormous potential to provide housing that is affordable to the end user, especially if the roles and responsibilities of the respective parties are set out clearly.

10. Innovative cross-subsidisation

According to the Urban Sector Network, there is little clarity on how to cross-subsidise. The general belief is that there should be cross-subsidisation from rich to poor. They suggest that cross-subsidisation in the form of commercial premises on the ground floor of residential buildings or elsewhere on the premises is more successful in subsidising the monthly payments of residents. Another option would be that where a project owns several buildings, some cross-subsidise others.

JHC stated that additional income generated by a new project contributes to the financial sustainability of the company. Large buildings are more sustainable than small ones and new builds are more stable than refurbished buildings: this analysis by JHC led to increased levels of cross-subsidisation of units and informed a framework for the financial integrity of all new developments.

The Springfield Terrace project demonstrated that cross-subsidisation has to occur over a large area (rather than within relatively small housing schemes) or between different uses in order to successfully use more expensive non-subsidised housing to cross-subsidise lower income households. Cross-subsidisation in the project failed largely due to deep-rooted class attitudes.

Apart from providing access to services, amenities and transport, one of the foremost success factors of the Vashi project is that sustainability was achieved through a diversity of low- and middle-income earners...
living together. This was successful because the right conditions were in place, including:

- well-functioning and democratic co-operative boards;
- good social planning from the outset;
- the provision of a range of services and amenities such as an association office; and
- access to economic opportunities.

Not only does cross-subsidisation make it possible for the inclusion of housing for low-income households, but it also prevents the creation of low- and middle-income ‘ghettos’. 

### 11. Sustainable, energy-efficient technologies

A key obstacle towards more sustainable housing is the rejection of alternative technologies despite major cost savings to the homeowner. Low awareness of the benefits of energy and water-efficiency measures result in the technology not being implemented by government and developers, or being removed by residents as has happened in the All Africa Games Village. It makes environmental and financial sense for housing to be energy efficient. Energy efficient and environmentally sustainable technologies such as recycling of water; energy efficient appliances and fittings such as aerated taps, dual flush toilets and solar water heating have been proven to reduce monthly costs in the long term, as shown in the Moshoeshoe project in Sol Plaatje Municipality and the Lynedoch EcoVillage outside Stellenbosch.

The winning design in a competition to design affordable eco-housing in Adelaide, Australia was based on criteria for medium-density inner-city housing and environmental sustainability. It achieved a 90% energy saving through solar power and portable evaporative coolers and 63% water saving through storage of grey water and rainwater for toilet flushing, landscape watering and car washing. Simple materials and building methods like earth walling, lightweight timber framing and corrugated steel reduced the overall cost.

Promotion of green technologies should be prioritised in all medium-density housing projects, but should be accompanied by information, training and homeowner education. Partnerships between government and the private sector are particularly crucial as financial constraints make innovation generally unattainable. Energy costs typically form 20–40% of low-income households’ monthly expenditure and it is important that the design of the housing reduces energy costs by installing ceilings, positioning windows correctly, having appropriate roof overhangs and insulating.

### 12. Housing quality and urban design

Housing quality and design are determining factors in financial sustainability – higher quality housing is cheaper to maintain.

Sakhasonke Village residents agreed not to allow the extension of units with informal material such as corrugated iron, but only formal brick and mortar structures, attesting to the ‘ownership’ that community members have taken of the project. In the case of Missionvale, higher-density living would have been perceived less negatively had physical structures been more solid and of higher quality, and had it incurred fewer maintenance costs from already-poor residents. The Stock Road example is perhaps most illustrative of the social tension and financial burden of poor housing quality. If possible, scope should be permitted in the design and layout to enable residents to make additions to their homes when they have the financial means to do so.

The Sakhasonke Village project confirmed that it is possible to create dignified physical environments for very low-income earners with the government housing subsidy by applying deliberate and careful cost cutting mechanisms and acquiring additional funding. Attempts to create a positive sense of place and to improve...
the quality of the environment and of communal open space were successful compared with the sterile environments of conventional RDP housing developments implemented with the same subsidy amounts.

In Samora Machel, general amendment of service standards and several measures to lower project costs were successful to different degrees and contributed to maximising the capital subsidy for the delivery of bigger starter units of up to 32m². A cost effective layout that reduced civil engineering costs was achieved through shorter plot frontages, sharing of water and sewerage connections, grouping of units and the pedestrian network and reduced road widths. Wider roads tend to increase the cost of plots, while the standard of roads and their dimensions have a major impact on the costs of land development. Wider roads increase the percentage of land allocated for public use and diminish the opportunities for subdivision of land for private use. The impact of the costs of the road network in the total project cost should always be minimised. The width of roads must reflect the estimated density of pedestrian, private vehicle and public transport traffic. However, no community representative structure was formed post-implementation due to the fact that the tenure was individual ownership. Continuation of some kind of community representative forum could have benefited residents, for instance through collective savings (‘stokvel’) to undertake maintenance, extend their units or maintain the trees. Satisfaction levels with community participation were low. In very poor communities, social and human capital formation on a sustained basis is particularly important. In order to maximise the benefits it is imperative that after the implementation of the projects investments in community and people development continue, especially regarding their savings and financial investment in their housing environment. The lack of community cohesion was manifested in the lack of maintenance of the communal space and the increase in social problems after completion of the project. The community, on the other hand, felt that government was not pro-active in providing the required support and direction after the project was completed. Government should seriously consider adding a capacity development component to the subsidy, both in terms of financial and human resources.

Reducing development costs can be achieved by:  
- shortening the length and width of roads as they make up the main infrastructure expenditure. Shorter roadways also reduce future maintenance cost;
- narrowing building widths as this reduces the length of road required;
- providing parking detached from the unit to reduce the length of roadway necessary to serve the total development;
- eliminating roadway curbs by draining the road to the centre, making it less costly to construct;
- eliminating drainage structures by replacing curbs and gutters with wide flat swales where possible;
- providing single pavements;
- locating blocks of units along contours to avoid retaining walls on sloping sites;
- increasing dwelling unit density to offset high land costs;
- locating higher-density units near the development entrance in mixed developments to minimise the length of roadway and utilities;
- building for present needs and leaving room for expansion;
- constructing row and townhouses in even modules of four, six and eight units in one building and on one level: the greater the number of units on one level, the lower construction costs will be as utility services can be reduced or combined;
- arranging utilities back to back or stacking utilities such as bathrooms over kitchens;
- eliminating variations, as long straight walls with no jogs or staggering are the least expensive to build, while corners add to costs;
- using modular or factory assembled units;
- eliminating ambiguous open space by incorporating it into adjacent private gardens;
- avoiding retaining walls and steps by using banks and ramps instead;
- using gravel or compacted fines for parking areas or walkways. These are cheaper than asphalt and concrete but require more maintenance; and
- retaining existing vegetation, which can sometimes reduce costs.
Soundproofing between units should not be minimised as privacy is essential at higher densities. Similarly, tree planting should not be reduced to save costs.
Guidelines

- Affordability is a complex issue that affects, and is affected by, a range of factors that ultimately influence the overall sustainability of settlements and society.

- Affordability levels for the majority of the population are very low and render them dependent on state subsidised housing. Matching the tenure type, affordability levels (socio-economic profile) and needs of target households with the housing product and overall settlement environment is an overriding factor in affordability.

- Key to affordability is an integrated approach to housing and settlement development where access to urban opportunities, public transport, education and health, sustainable livelihood activities and other essential life-enhancing elements are accessible to the household, without incurring unreasonably high costs.

- Resident participation, capacity development and institutional arrangement are decisive factors in reducing household vulnerability and ensuring financial and economic sustainability in the provision of medium-density housing. To realise the social, financial and economic asset value of housing, national government subsidies should include a financial component for capacity development with an emphasis on livelihood considerations and local economic development. Residents' long-term empowerment in understanding and exercising their housing rights and responsibilities is critical in ensuring sustainability.

- Government subsidisation of infrastructure and facilities and a contribution to providing a basic housing unit are essential, but all spheres of government need a keen understanding of the socio-economic profile of the target market of their policies and frameworks. For households with low, irregular or unstable incomes, adequate housing needs to be affordable and short-term cost benefits should not outweigh low-term costs – a free house does not necessarily imply a product that is affordable in the longer term.

- Local economic development opportunities should be promoted through settlement development, as supplementing household income and reducing household vulnerability is essential to supporting the household and community livelihood strategies.

- It makes environmental and financial sense for housing to be energy efficient. Energy efficient and environmentally sustainable technologies such as recycling of water, energy efficient appliances and fittings such as aerated taps, dual flush toilets and solar water heating have been proven to reduce monthly costs in the long term and should be applied in order to sustain affordability.

- The most important issue contributing to the current housing situation is that the South African housing market does not perform as a single market with a range of housing options available to all income levels. The primary, secondary and informal housing markets are linked and it is therefore imperative that government accepts responsibility for the performance of the entire housing market and expedites housing development. Current housing supply across the entire housing market is inadequate and unlikely to support the affordability thresholds of many of the sub-markets. Barriers and enablers influencing housing demand and supply in all sub-markets must be monitored and addressed and mechanisms (such as value capture) should be implemented to rectify blockages that undermine a functioning market.
Endnotes

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Poverty is not only about income and assets but also about health, life expectancy, diet, education, security, access to vital resources and other living standards. It is a vicious cycle that affects every part of a person, socially, economically, politically, psychologically, culturally and environmentally.

The sustainable livelihoods approach is complex and often misunderstood. However, it is invaluable in informing development and project planning at different scales, and in strengthening and monitoring the effectiveness of development initiatives, especially in communities at risk. The ‘livelihoods framework’ is a tool for understanding how households draw on capabilities and assets to develop livelihood strategies made up of a range of activities. It defines and categorises the different types of assets and entitlements which households have access to, examines the different factors in the local and wider environment that influence household livelihood security and studies the connections between the local or micro situation and actors, institutions and processes active in the wider world.

The case studies demonstrate the importance of the participatory or appreciative approach, wherein communities are actively involved in the development and upholding of their housing environments. Special reference is made to the Sakhasonke Village and Carr Gardens projects, as well as some of the bodies corporate of Springfield Terrace.

Working with a framework requires an understanding of its different elements and the connections between them. However, because people view the world differently and their theories about the relations between things differ, frameworks are continually contested, adapted and refined.

![The household triangle](image-url)
In the early 1990s, Chambers and Conway built on research and ideas put forward by the World Commission on Environment and Development and developed a definition of livelihoods and the factors that contribute to their sustainability. Their definition was modified by DFID (UK Department for International Development) in 1999 and is now being widely used:

“A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from shocks and stresses and maintain and enhance its capabilities and assets both now and in the future, whilst not undermining the natural resource base.”

Every household has a variety of capabilities and assets. Household livelihood security is often affected by the ability to diversify livelihood sources. The more diverse a household’s livelihood strategies are, the bigger its capability and asset base and the more secure it is. The smaller a household’s asset base is, the more vulnerable it is likely to be. Its ability to cope with, and recover from, shocks like retrenchment and stresses like inflation is reduced.

Sustainable livelihoods theory defines assets as follows:
1. **Natural (environmental) capital** – natural resources such as land, water, wildlife, biodiversity and environmental resources.
2. **Physical capital** – basic infrastructure including water, sanitation, energy, transport, communications, housing and the means and equipment of production.
3. **Human capital** – health, knowledge, skills, information, and the ability to labour.
4. **Social capital** – social resources such as relationships of trust, membership of groups, networks, and access to wider institutions.
5. **Financial capital** – financial resources including regular remittances or pensions, savings, and supplies of credit.

McLeod proposes the addition of two new assets: *institutional knowledge* and *institutional or political capital*.

Other livelihoods definitions put people more at the centre, with added focus on issues of ownership, access and decision-making, such as the one below:

“People’s capacity to generate and maintain their means of living, enhances their well-being and that of future generations. These capacities are contingent upon the availability and accessibility of options which are ecological, economic and political and which are predicated on equity, ownership of resources and participatory decision making.”

A livelihoods approach to development includes assessment criteria and indicators of livelihood sustainability and ways to monitor progress towards more sustainable development. It is also able to assist in identifying strategies to reduce disaster risk and promote livelihood security. Most importantly, the livelihoods framework emphasises understanding the household, how households differ from one another, and how they relate to each other (inter and intra-household relations). It facilitates an understanding of different ideas about well-being and different levels of vulnerability and resilience. Household livelihood strategies involve allocating roles and deciding who does which type of work, how household income is spent, who
is prioritised for education, and so on. The household is a bargaining space where household members negotiate important decisions that affect their livelihoods. The livelihoods framework explores the power, control and influence that different members of the household (based for instance on gender and age considerations) have over the assets, activities and capabilities of the household. It also interrogates how livelihood shocks and stresses affect power and control inside the household. A household’s livelihood options are enhanced or restricted by factors in the external environment and it is important to monitor the changing external environment to understand the pressures and opportunities that inform household livelihood strategies.

The livelihoods framework therefore, helps to:

- identify (and value) what people are already doing to cope with risk and uncertainty;
- make the connections between factors that constrain or enhance their livelihoods, and policies and institutions in the wider environment; and
- identify measures that can strengthen assets, enhance capabilities and reduce vulnerability.

It is important that housing is integrated with the surrounding area to improve access to opportunities – physically, functionally and institutionally. For example, spaces for small economic activities can be provided through flexible design of dwelling units or by units especially built for trading purposes. However, business activities should not cause disturbance to other residents or health and safety hazards.

Sustainable livelihoods considerations during planning and implementation may result in a range of positive by-products such as higher levels of community cohesion and household satisfaction, lower levels...
of poverty (income, social and environmental poverty), as well as higher levels of ‘custodianship’ of the immediate housing environment. Unfortunately, the contrary is likely to result in adverse conditions with significant implications for sustainability on household, community and city-wide levels, as is demonstrated by the Stock Road, Weltevreden Valley and Missionvale projects. Ultimately, the livelihoods framework shows key links between household and local situations, and the policies and programmes at various levels, which can either provide opportunities for people or make their situations worse.

Policies, institutions and processes (at a household, national and even international level) determine options for livelihood strategies as well as access to decision-making bodies and external sources of influence. Organisations, in both the public and private sectors, decide and implement policies, legislation and regulations and undertake activities that affect the livelihoods of urban poor people.

Majale suggests that most regulatory frameworks in the urban South are incongruous with the realities of poor communities and are a major impediment to the achievement of sustainable livelihoods. This is largely due to the excessively high standards and complex, time-consuming procedures conforming to official requirements. The effect of inappropriate regulatory frameworks is especially constraining to home-based enterprises (HBEs), which comprise all entrepreneurial activities that take place in the home, regardless of their scale. The use of residential space for HBEs is widespread, although often unapproved by planning authorities. HBEs are expected to fulfill regulations pertaining to not only housing but also employment. The former tend to focus on space standards for different room types, construction, ventilation, daylighting and fire prevention. Regulatory constraints on HBEs perpetuate the informality of employment opportunities open to poor men and women in urban areas, discourage asset accumulation and access to credit and increase the vulnerability of workers.

Research into how low-income households initiate extensions to existing dwellings and how they use space for HBEs clearly demonstrates the difference between the intentions of policy-makers and designers and the needs and priorities of the occupants. The case studies prove that changes made to housing by occupants that contravene current regulations do not necessarily constitute rampant disorder but rather “a shifting of the boundaries of acceptability in a people-ward direction” which strengthens livelihoods and reduces vulnerability.

The sustainable livelihoods approach offers both a conceptual and programming framework for sustainable poverty reduction. Unlike more traditional approaches that tackle poverty by identifying and addressing the needs of poor people, the sustainable livelihoods approach seeks to improve their lives by building on their assets.
Guidelines

- The ‘livelihoods framework’ is a tool for understanding how households draw on capabilities and assets to develop livelihood strategies made up of a range of activities. It defines and categorises the different types of assets and entitlements which households have access to, examines the different factors in the local and wider environment that influence household livelihood security and studies the connections between the local or micro situation and actors, institutions and processes active in the wider world. Unlike more traditional approaches that tackle poverty by identifying and addressing the needs of poor people, the sustainable livelihoods approach seeks to improve their lives by building on their assets.

- Higher-density housing delivered through an integrated approach complements the promotion of economic development and opportunities for sustainable livelihoods. A livelihoods approach enables implementing agents and communities to design processes that take into consideration diversity and vulnerability and recognises that households and livelihoods are constantly changing in response to shocks, stresses and seasonality.

- Most regulatory frameworks are incongruous with the realities of poor communities and are a major impediment to the achievement of sustainable livelihoods. This is largely due to the excessively high standards and complex, time-consuming procedures conforming to official requirements.

- Successful poverty reduction strategies have to address a range of issues over time, while a holistic diagnosis achievable through the livelihoods framework allows for the identification of the most strategic interventions.

- A participatory, livelihoods approach to developing higher-density housing provides a useful framework for monitoring the effects of the development initiative, providing indicators of livelihood sustainability, identifying unintended consequences, and devising meaningful interventions.

- The livelihoods framework assists in identifying (and valuing) what people are already doing to cope with risk and uncertainty; makes the connections between factors that constrain or enhance their livelihoods, and policies and institutions in the wider environment; and identifies measures that can strengthen assets, enhance capabilities and reduce vulnerability.
Endnotes

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5. COMMUNITY PARTICIPATION AND LEADERSHIP DEVELOPMENT

Poor people in South Africa vote and play their part in civic structures and forums, but get little in return for their participation in democracy. Despite being occasionally ‘consulted’ about their needs, the voices of poor urban residents seldom reach policy-makers. For instance, IDP processes lack credibility and budget priorities tend to be set by more powerful actors like government structures and business.¹

The case studies documented in this book that best met the needs of residents displayed higher levels of participation by residents and higher levels of leadership. Examples are Sakhasonke Village (design, implementation and community projects), Newtown Housing Co-operative (leadership, maintenance, community projects), Carr Gardens (community activities) and Washington Heights (project initiation, design and construction, leadership). However, in projects such as the N2 Gateway (Phase1) and Stock Road, flawed assumptions about the needs of the beneficiaries resulted in conflict between stakeholders and dissatisfaction with the housing environment.

In cases where there was meaningful participation, the participation processes were time consuming and intensive and there was considerable capacity building of committee members and beneficiaries through workshops and training courses. Access to information and leadership skills are necessary to facilitate informed and collective participation in urban development policy formation and practice and to develop strong leaders. It is notable that in most cases the capacity building of beneficiaries and facilitation of the participation process is not implemented by the state, but by outside agencies.

These case studies demonstrate the fundamental impact that citizenship, resident participation and leadership have on the sustainability of a community or housing project. In rental housing projects such as Carr Gardens, residents conveyed the need for some community institutional arrangement and the N2 Gateway - Joe Slovo (Phase 1) makes obvious the important role of residents’ bodies or committees. Community participation should thus be considered an essential element of any sustainable development project.

Strong leadership and community cohesion contribute significantly to communities’ sense of ownership of the housing environment. The case studies demonstrate that all components of sustainability are affected by a community’s ability to organise itself and participate actively in its housing environment. The effect of a lack of continued active participation is clearly manifested in different aspects of the projects.

Community participation processes in development projects should incorporate, as much as possible, the development of skills and abilities which will increase the sustainability of the community and strengthen citizenry; these should include enhancing:
- understanding of the concepts of development and leadership;
- skills such as financial management, meeting procedures, facilitation and communication;
- understanding of rights-based approaches to development, advocacy and lobbying, gender, diversity and conflict management; and
- leadership development for the multiplication of community-centred development projects.

Members of the Rainbow Housing Co-operative for domestic workers in Cape Town marched to parliament on 17 May 2007 to hand over a memorandum regarding their housing needs to the national Minister of Housing.
The collective efforts and commitment of the body corporate of one of Springfield Terrace’s sectional title blocks stand as an excellent example of community members taking responsibility for, and contributing positively to, the improvement of their housing situation. Similarly, members of Sakhasonke Village are actively involved in most aspects of life in their village in an effort to meet the widest range of community needs. On the other hand, the absence of leadership and community cohesion in Missionvale and Weltevreden Valley is more than just physically visible in the project areas.

Many NGOs can partner communities to offer leadership development but resources for this have become increasingly scarce. As a crucial component of successful medium-density housing delivery, government will have to invest the resources for leadership development within beneficiary communities.

The aim of most development programmes (such as the delivery of housing or the implementation of community projects) is to bring about change. However, not all development works towards the benefit of communities or leads to effective and sustainable change. Developers are often market driven and look at development as a strategic intervention through which they can make a profit. In many cases, when they consult with communities, they create expectations of communities benefiting if they enter into partnership with them. However, these communities, such as Stock Road and N2 Gateway (Phase 1), often find themselves disillusioned.

A community will only take ownership of a community project if they are consulted regularly and are able to participate in decision-making. This type of leadership is referred to as collective leadership and is a process whereby leadership is not provided by one person alone but by a group of people, for example, a democratically elected committee.

The goals of participatory, just and sustainable development can only be achieved through a process of empowerment in which the community actively participates. Community development is not a once-off project, but a learning experience for the community, which helps them to develop a deeper understanding of their world and the world around them. Through participatory development processes they are able to:

- discuss, analyse and reflect on their situation and needs;
- make informed decisions; and
- develop self confidence and self esteem to challenge the status quo and to follow through with their plans even when obstacles are identified.

Empowerment does not happen simply as a result of community involvement in making decisions. There are many examples where communities were not allowed to fully participate in the development process. In such examples the community's perspective or desires were set aside and the community voice was effectively ignored. In other examples, promises made to communities never materialised.
The empowerment process also does not mean that it is only through participation that communities can achieve power. Rogers describes the empowerment process as people gaining an understanding of and control over social, economic and/or political forces in order to improve their standing in society. The effectiveness of change and community development depends on the participation of the community in their own development process and how they use their newly learned skills, knowledge and values. Rogers further argues:

“... the aim of development is to help all people to enhance their contribution by identifying, developing and harnessing their potential. In this way, peripheral groups can be legitimated to society as a whole, the invisible can be seen, the voiceless can be heard to speak for themselves; those who feel negatively about themselves can begin to see their positive contribution to the welfare of themselves and others. And this becomes a continuous process: for as the individuals or groups develop the ability and the confidence to see and to use more fully their own power, the process of development becomes self-generating”.

Advantages of community participation include the following:

- communities take ownership of their own development;
- communities voice their own needs, aspirations and wishes;
- achievement of “self reliance, freedom of action and thinking, decision-making and executions”;
- communities realise that their knowledge and thinking are important;
- communities understand and exercise their rights and responsibilities as citizens;
- communities realise the power of collective action;
- community struggles help people to identify and sympathise with others experiencing similar problems; and
- communities act, utilising their power to improve their living conditions.

Notwithstanding its benefits, critical community participation may cause the delivery process to take longer than where the community is only consulted. Sometimes time available for community participation is tempered by the interests of those funding development interventions, who may prescribe that delivery occurs quickly, leaving no time for thorough community participation processes. Regardless, in developing medium-density housing it is important to realise that development projects or initiatives will only have legitimacy if there is a thorough consultation and participation process with all stakeholders in the community and if the community feels that it can trust the change agent. Participation has to be a golden thread running through the entire delivery project cycle to ensure ongoing legitimacy within the community.

The presence of strong social ties in a community enables community members to manage risk and vulnerability. Social capital positively influences co-operation between government, communities and NGOs and promotes participation in policy making and government processes. Clubs, community organisations, associations, as well as strong relations among neighbours and families, are indicators of social capital. A large number of groups and organisations in a community increase that community’s welfare. For example, these factors were present in Carr Gardens and Sakhasonke where residents also displayed relatively high levels of satisfaction with the overall housing environment.

The concentration of these types of networks within a community is referred to as bonding. However, bonding can also have negative effects, such as restrictions on individual freedom, a demand for conformity and restrictions in human capital accumulation. The horizontal networks that develop between communities.
is referred to as bridging. In addition, social capital also refers to links on a vertical level. This linking or scaling relates to networks among communities, government, the private sector and other social role players. Linking communities with these groups (and vice versa) has the potential to facilitate access to formal structures and to connect them with institutions. An intermediary such as an NGO is often needed to facilitate the building of networks between heterogeneous structures. High levels of bonding and bridging achieve a favourable combination of strong intra-community ties combined with strong extra-community linkages, which result in social opportunity. Importantly, the ability of a group or community to act collectively depends on opportunities created by the existing institutional framework (‘good governance’).

Current South African research and literature on the subject of social capital formation is inadequate. However, the importance of developing social capital lies at the core of the shift from provision of housing alone to the development of sustainable human settlements. The Social Capital Formation Strategy is one of the eight pillars of iKapa Elilhlohe, the Growth and Development Strategy of the Western Cape Provincial Government, which envisions shared growth and ‘a home for all’. Their definition states that:

“Social capital is referred to as the institutions, relationships, norms and networks that shape the quality and quantity of society’s social interactions and enables collective action.”

The social capital approach is people-centred and considers networks, addresses issues of building trust and co-operation, and investigates the interaction between stakeholders, individuals, organisations and institutions, and their potential for collective action to mobilise resources.

The concept of social capital is, however, widely criticised by academics, mainly because of the many definitions of the concept. In a review of several definitions, Gomulia derived the following working definition:

“Social capital is the capacity of networks to mobilise resources to obtain beneficial outcomes for individuals. These networks are built between individuals and they are able to mobilise resources if individuals have developed the following common features in relating to one another. Firstly, the most important feature is trust, secondly, individuals must have instantiated common norms (reciprocity, solidarity, honesty, mutual support) and thirdly, they need to communicate frequently with each other. Depending on the level of trust and the norms that mobilise networks, the relationship between the network actors and the desired beneficial outcomes vary. Networks are the key term in defining social capital because social capital can only become tangible through these networks.”

On the subject of social capital and participation, the Western Cape’s Social Capital Formation Strategy stated: “… the country’s Constitution establishes the participatory nature of our democracy. This participation needs to extend beyond periodic voting for representatives”. It further states that participation should include:

“… government working together with different actors within civil society to deliver services and generally ensure the population’s well-being. Accepting this approach will mean that government departments cannot continue doing ‘business as usual’. Government needs to see civil society as people who can help them achieve their mission, rather than an obstacle or interferers… Government also needs to abandon any idea that it ‘knows best’ and instead work with and build on the strengths and knowledge of communities”.

The Strategy states that strengthening social capital will not in itself directly lead to job creation, but will help to ensure that communities in which unemployment rates are high do not suffer to the same extent as they would otherwise. It will also create a more conducive environment for investment and employment creation. This in turn may help to address the unemployment problem. The Social Capital Formation Strategy foresees implementing programmes that support the formation of social capital by the Department of Provincial and Local Government. These will include five initiatives that:

I. Aim to build social capital through developing integrated human settlements where the focus shifts from quantity to considering the quality of the neighbourhood. This includes consideration of how geographic
location and provision of opportunities for social interaction contribute to creating quality human settlements. Quality concerns include design issues such as safe access to toilet facilities (especially for women), the relationship of the house door to the neighbourhood, and the possible multi-functionality of the house (running a spaza shop, crèche, hairdressing salon, sewing business, etc.).

2. Promote mixed-use neighbourhoods to ensure that areas are people friendly and safe at night. To promote bridging and linking capital, provincial government will encourage mixed-income neighbourhoods, and neighbourhoods where newer immigrants and those who have lived longer in the province can learn to live and work together.

3. Give security of tenure and rights to inheritance of the housing unit/dwelling, and a range of options such as affordable rental housing. Tenure security for women and children is threatened under customary law if a spouse dies. The Department of Provincial and Local Government is committed to distributing templates for wills and title deeds to protect parties.

4. Recognise the impact of the process of creation of housing on end-user communities. Partnerships such as the People’s Housing Process will continue. The delivery is sometimes slower, but there is higher buy-in and empowerment. The creation of more unique and interesting neighbourhoods than contractor-built neighbourhoods will be aimed for.

5. Promote higher-density settlements closer to opportunities and services, which will undermine racial segregation. The location of housing projects is conducive to urban sprawl and environmentally unsustainable, and promotes poverty for those far from economic opportunities and social amenities.

Positive developmental outcomes originate in networks that mobilise resources, such as economic assets in the form of income and employment, as well as assets such as information, personal support, political participation and enforcement of rights. Moreover, individuals with better living conditions are likely to have more resources to connect with other people and organisations. Woolcock\(^\text{10}\) put this pertinently:

> “Living on the margins of existence, the social capital of the poor is the one asset they can potentially draw upon to help negotiate their way through an unpredictable and unforgiving world. As Dordick astutely notes, the very poor have ‘something left to lose,’ namely each other. While much of the discourse surrounding poor people and poor economies is one of deficits, a virtue of the social capital perspective is that it allows theorists, policy makers and practitioners to take an approach that recognises the assets of poor communities.”
Guidelines

- The ‘social capital’ formation approach is people-centered and considers networks, addresses issues of building trust and co-operation, and investigates the interaction between stakeholders, individuals, organisations and institutions, and their potential for collective action to mobilise resources.

- There are positive linkages between social capital formation and developmental outcomes: projects that best meet the needs of residents display higher levels of participation by residents and higher levels of leadership. Therefore, the importance of developing social capital lies at the core of the shift from provision of housing alone to the development of sustainable human settlements. The quality and extent of leadership, citizenship and resident participation has a profound impact on the sustainability of a community or human settlement project.

- All stakeholders involved in the development of higher-density housing must place the ongoing development of social capital and community participation at the centre of project planning processes – before, during and after implementation.

- Participatory development processes empower communities by enabling them to discuss, analyse and reflect on their situation and needs, make informed decisions and develop self-confidence and self-esteem to challenge the status quo and to follow through with their plans even when obstacles are identified.

- The formation and support of active and knowledgeable leadership from within poor communities and the facilitation of collective participation in urban development policy formation and practice should be supported by government and its implementing agents.

- The ability of individuals and groups to mobilise resources on the basis of trust, common norms and constructive communication, together with the prioritisation of information sharing, skills training, learning and education, will contribute to the formation of networks that increase community participation, empowerment and sustainability.

- Social capital positively influences co-operation between government, communities and NGOs and promotes participation in policy-making and government processes. The provision of sufficient financial and human resources for meaningful and sustained community participation and leadership and capacity development should become part of government’s engagement strategy and delivery mechanism alongside the formation of appropriate platforms to engage at the local level.

- Notwithstanding its benefits, critical community participation and capacity development may cause the delivery process to take longer than where the community is merely consulted. The development of medium-density housing projects and initiatives will only gain legitimacy if there is a thorough participation process with all stakeholders in the community and if the community feels that it can trust the change agent.
Endnotes

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6. MEETING THE NEEDS OF VULNERABLE PEOPLE

Special needs housing should not be equated with traditional family housing as defined in the subsidy Housing Code. Special needs housing is a facility providing safe and secure accommodation with support facilities and services.¹ The resource book on higher-density housing does not investigate special needs housing per se. Rather, based on the case studies and current literature,² proposals that are mindful of the need to consider housing – and in this instance, higher-density housing – for people with special needs should form part of a larger welfare package in an integrated and inter-sectoral approach. Higher-density housing lends itself well to catering for the needs of vulnerable people.

Vulnerable groups or people with special needs are not a homogeneous group. Each sub-group and individual within sub-groups has a variety of needs. People with special needs who fall within the lowest income brackets are especially at risk of poverty and destitution³ as they can least afford private services and facilities. Definitions of vulnerable groups vary. According to Wicht⁴ vulnerable groups are created by many factors such as:

- rapid urbanisation;
- high unemployment levels;
- increasing levels of poverty;
- marginal opportunities or support for sustainable livelihoods;
- cultures of violence and gangsterism; and
- high substance abuse.

These result in the loss of dignity, humanity and self-respect, and the consequent lack of a social safety net to provide support and services. As global socio-economic conditions worsen, greater numbers of citizens will fall into the category of vulnerable groups. It is important to consider the needs of vulnerable groups in the planning and implementation of development processes and projects. Special needs groups considered in this book include people living with HIV/AIDS, the elderly, people with physical disabilities, children and youth (orphans and child-headed households), the unemployed and women.

A range of special needs exists in any prospective project and appropriate approaches are needed to address them. Inter-sectoral responses whereby housing, welfare and other partners work together are required. Policies and resources should not be allocated to meeting only the shelter needs of people with special needs if their other needs are more urgent, or if their other needs result in people being unable to retain the shelter once it is provided.

BNG does not provide details on special needs housing. Moreover, a coherent policy has not yet been formulated nationally, and current housing policy does not provide mechanisms for organisations to access subsidies for special needs housing.¹ This is in spite of the South African Constitution’s Bill of Rights that seeks to preserve and enhance human dignity and substantive equality.

So far, the provincial governments of Gauteng, KwaZulu-Natal and the Western Cape have attempted to formulate, to varying degrees, policies relating to special needs housing; additionally, the Social Housing Foundation launched a Special Needs Housing Forum in October 2005 to address the huge gap in the special needs housing sector.

Generally, the case studies make provision for residents with physical disabilities and the elderly to access ground floor or single-storey units. Ramps for wheelchairs and corridors wide enough for wheelchair access were provided for the physically disabled in Carr Gardens and Newtown Housing Co-operative, while an additional subsidy was accessed for the provision of wheelchair ramps and bath grab rails in some single-storey units in Stock Road. People with special needs were allocated ground floor units in the N2 Gateway (Phase 1). Involvement of the elderly is encouraged in Sakhasonke Village’s food garden and the HIV/AIDS project. Often women’s child-care, domestic and care-giving responsibilities prevent them from...
securing employment. The Sakhasonke Village project responded to this by providing a day-care facility at the community centre for the children of working mothers.

### 1. Women

Inequality in South African cities is unacceptably high, displaying measures similar to some of the world’s most unequal societies as indicated by Gini-coefficients. Most importantly, women bear the burden of poverty and inequality, with significant implications for their housing rights. The insecurity of their economic circumstances makes it more difficult for women to access adequate housing. Data has revealed that women constitute a large portion of the new migrants to the city as they move from rural to urban areas in search of employment and a better life.

Several factors impede women’s access to housing including their specific economic conditions and social factors such as:

- the continued dominance of patriarchal practices;
- customary and religious laws;
- domestic violence; and
- HIV/AIDS.

A time-spent study by Budlender in 2001 found that women aged ten years and above spend an average of 216 minutes a day on unpaid housework, compared with men, who spend an average of 83 minutes on the same tasks. This reduces opportunities for women to undertake paid work, negatively impacts on their chances for mobility in the workplace and increases their need to engage in survivalist economic activities or transactional relationships. When women are able to find employment, it is usually unskilled, low-paid and informal.

In 2001, two out of five employed women worked in unskilled jobs and one out of five employed women earned R200 or less per month, compared with only 9% of employed men. JHC’s Community Development department identifies income-earning opportunities and skills needs and arranges training programmes accordingly for unemployed residents of their buildings. These include beadwork and a three-month certified training programme in early childhood development to help tenants set up childcare facilities at their buildings or elsewhere in the city. The garden project, HIV/AIDS support centre, skills and business training at Sakhasonke contribute to the empowerment of the destitute and unemployed. In the Sakhasonke Village project women contractors were specifically invited to participate in the construction process. Specific tasks were reserved for them, such as painting and paving.

Despite women’s pivotal role in the housing environment, the case studies found that little design attention, if any, was given to their special needs. There were only a few examples of security considerations. Carr Gardens improved security and safety through burglar proofing, 24-hour security and general lighting in the form of light fittings fixed against buildings. Newtown Housing Co-operative installed strategically placed lighting (although this has regular maintenance problems). For households to control the public space better, the number of households sharing a staircase was reduced to no more than six in Newtown and to three in Springfield Terrace. Site layout and building design considerations such as courtyard configurations improve surveillance and increase safety for women and children in Sakhasonke Village, N2 Gateway (Phase 1), Newtown Housing Co-operative, Missionvale and Samora Machel.

### 2. People affected by HIV and AIDS

The Department of Housing’s HIV/AIDS Framework Document emphasises that in responding to the impacts of HIV/AIDS on housing and human settlements, interventions must be based within a human rights framework, and should be considered holistically and not perceived as a medical concern only.
The City of Cape Town’s HIV/AIDS/TB Multi-Sectoral Strategy acknowledges that “HIV/AIDS is not only a human tragedy, but a development dilemma as well”11, and that many of the most significant HIV/AIDS interventions are most effectively undertaken at local levels as it is at this level that individuals, households, communities, organisations and businesses typically experience the effects of the disease most directly. This highlights the role and response of local authorities in terms of their mandate, given that as structures of government, they are closest to citizens and are providers of key developmental services. The report contends that the most important challenge for municipalities is to shift paradigms from considering HIV/AIDS as primarily:

> “… a health and behavioural concern, to recognising how poverty, gender inequality, joblessness, lack of food security, inadequate shelter and lack of basic services, income inequality, despondency and lack of future prospects, amongst others, conspire to make people more vulnerable to HIV infection and less able to cope with the consequences of HIV/AIDS”.

The Department of Housing anticipates that HIV/AIDS will have the following impact on housing demand and housing policy:13

- On the basis of statistics and projections for HIV/AIDS deaths, it can be assumed that there will be a decrease in the demand for housing. Nevertheless, factors such as the use of anti-retroviral medication to prolong patients’ lives, stabilisation of the rate of infection and the fact that not all members of a particular household are infected, indicate that the reduction in demand will not be substantial. Other aspects impacting on housing demand are the incidence of child-headed households and the increase of extended family structures such as grandparents caring for relatives and orphans living with HIV/AIDS.

- Medical expenses and loss of income are likely to influence the affordability of housing. They reduce the ability of households and communities to pay for services, as well as their ability to pay the R2,479 needed, in most instances, to access the housing subsidy scheme.

- The vulnerability of women and children will increase as they are especially susceptible to HIV infection and are often displaced from their homes by ruthless relatives or evicted due to their inability to pay.

- Tenuous tenure situations occur when approved subsidy beneficiaries die before taking registered ownership of their properties, impacting negatively on housing development processes and the security of their households.

- The lack of co-ordination in the housing finance sector between lenders and insurers with regard to the impact of HIV/AIDS impedes the ability of households to access additional finance and consequently motivates a dependence on the housing subsidy.

- High insurance premiums will increase the cost of long-term credit.

- Numerous provincial governments may have to reconsider their focus on the People’s Housing Process and institutional supply systems. The report states: “HIV/AIDS will aggravate the current capacity constraints of delivery agents and will hinder implementation and delivery of housing.”

According to Pillay et al “women are disproportionately affected by HIV/AIDS due to their biological disposition which renders them more susceptible to contracting the virus and women are also the majority of caregivers to people living with HIV/AIDS as well as children orphaned through the disease”.14 Other studies show that those who are informally employed hesitate to seek treatment due to high opportunity costs. It is likely that this impact will grow worse in future. The HIV/AIDS epidemic also impacts negatively on women’s housing rights. Ill-health or time spent caring for others diminishes their chances of securing employment and the financial resources to access housing. The Department of Housing’s HIV/AIDS Framework Document15 emphasises that interventions must be based within a human rights framework and should be considered holistically and not merely as a medical concern.

Only two of the case studies considered interventions pertaining to, and support for; residents of their projects who were affected by HIV/AIDS. Awareness campaigns, community events and information pamphlets on HIV/AIDS, as well as condom cans in the Carr Gardens project, form part of the JHC community development programme to strengthen communities and enhance social values. Domestic violence is also addressed. Individual counselling and advice on these and other social concerns also receive attention.
An important component of the Sakhasonke Village project was the inclusion of a strategy addressing the needs of people living with HIV/AIDS and their families and preventive measures around contracting the virus. A food garden project is linked to the HIV/AIDS project and aims to assist residents with fresh, inexpensive vegetables, targeting those living with HIV/AIDS, TB and other health risks.

There are some creative alternatives to meeting the needs of vulnerable groups. A co-housing scheme to accommodate households without productive adults, especially for households where the lives of breadwinners have been claimed by HIV/AIDS, was designed by architect and associate professor, Rodney Harber. Co-housing combines a range of ages and household types in dwellings with shared facilities such as kitchens, bathrooms, diningrooms, workshops and other facilities, which create a ‘pseudo extended family’ as opposed to an institution. The approach encourages a community-based response and in this way, people moving into co-housing are able to maintain their existing social ties and benefit from an extended ‘family’ and social support network. The design consists of very small units backing onto a communal space with limited access, to create a sense of security for households consisting mainly of AIDS orphans and pensioners. Whiteside argues that freestanding subsidy houses are “entirely inappropriate for sustainability and survival” when it comes to meeting the needs of vulnerable groups and people with special needs. Such a co-housing format could be creatively incorporated into higher-density environments.

3. Children

According to the University of Cape Town’s Children’s Institute home ownership should theoretically provide some financial security and enable the transfer of property, which is a family asset, from one generation to another. However, the law of succession and the passing of title deeds where children who are already living in subsidy housing lose their parents has only recently been addressed.

The Children’s Institute identified two possible areas of need for child-headed households: firstly, attention to mechanisms to enable children’s access to housing if they do not have caregivers; and secondly, assistance with the maintenance of housing.

Ultimately, planning should anticipate the increased need for facilities for children such as schools, clinics, libraries, sporting facilities, transport routes and safe open spaces and the imperative of developing child-friendly cities. Children will benefit if housing is located within reasonable distance from other services. In addition, there should be safe places where children can play and youth can socialise. The prevention of conflict between cars and pedestrians, especially children, needs to receive special design considerations in higher-density housing projects.

The needs of mothers and children living in Sakhasonke Village are met through the provision of a crèche and central play areas. Craft work activities, screen-printing and sporting facilities in the surrounding area contribute to youth development. A crèche also forms an important part of Carr Gardens and the youth have access to facilities in the area. Stock Road has a netball/basketball court but no designated or grassed play areas for children, while in Samora Machel, play areas with equipment were provided as part of semi-private spaces, using the contingency funds which were still available on completion of the project. The N2 Gateway (Phase 1) project paid detailed attention to play areas for children, but neglected the functioning and location of the crèche.

The design of a dwelling is also important from a child’s perspective as space and privacy may decrease the likelihood of domestic violence, abuse and the spread of disease. Residents of case study projects such as Missionvale, Samora Machel and Sakhasonke Village where housing units mostly consist of one bedroom or two bedrooms divided by a partition raised concerns about the lack of privacy and space. Parents felt that they generally do not have privacy from children in terms of their intimate relationship.
4. People with disabilities

A range of disability provisions form part of the existing housing code. The Special Needs Housing Forum recommends that ideally, housing projects should accommodate beneficiaries with special disability needs and equip their units with the appropriate facilities. This usually does not occur to the extent that it could.

Ways of meeting the needs of vulnerable groups living in higher-density housing include:

- setting aside units in new housing projects for group foster families to cope with the increasing number of orphans;\textsuperscript{20}
- locating higher-density housing close to transport adapted to the needs of people with disability or illness;
- ensuring warm, ventilated and dry units, especially for the elderly and people living with HIV/AIDS;
- incorporating a community daycare centre, eliminating the need for institutionalisation and freeing family members to continue employment. The community centre could also function as a space for home-based care workers to increase their effectiveness.\textsuperscript{21} Ideally it should encompass initiatives aimed at developing social and human capital such as information, learning and literacy, training, health, child care, youth, livelihood and trading activities;
- providing access to capacity and resources such as a range of social support services, support organisations and financial resources like government funding, grants and donor funding;
- securing the assets of remaining spouses/partners and family, especially of child-headed households. Matters such as transfer of property and holding houses in trust for the children for a designated time should receive attention;\textsuperscript{22}
- establishing partnerships to ensure that the limited resources and skills available are used effectively and efficiently, and to address the wide range of needs between public sectors, within and across tiers of government, and between the public and private spheres;\textsuperscript{23}
- utilising a livelihoods approach including employment creation strategies, community gardening initiatives, soup kitchens and feeding programmes, such as at the Sakhasonke Village project;
- utilising additional subsidies (like the backyard subsidy) to enable households to finance the building of additional rooms or services to households that foster children or care for the sick;\textsuperscript{24}
- ensuring that vulnerable groups participate as far as possible in strategies created to address their needs in order to maximise support; and
- making alterations applicable to each category of special needs, such as proper lighting in public areas to increase safety for women and children, incorporating wheelchair ramps, bathroom grab rails and wide corridors for wheelchairs and allocating ground floor and single-storey accommodation to the elderly and disabled.
Guidelines

• There is a wide variety of needs among vulnerable groups, and people with special needs who fall within the lowest income brackets are especially at risk of poverty and destitution. As the number of vulnerable persons grows because of socio-economic conditions, it is becoming increasingly important to consider their needs in planning and implementation of development processes and projects.

• However, a coherent special needs housing policy has not yet been formulated nationally, and current housing policy does not provide mechanisms for organisations to access subsidies for special needs housing.

• Government and implementing agents should take into consideration the range of special needs of residents and should develop appropriate approaches and subsidies to address them, with housing forming one part of an integrated package of services.

• Multi-sectoral approaches should be adopted based on a human rights framework, where public, private, community-based and non-government partnerships are able to co-operate effectively. Policies and resources should not be allocated to meeting only the shelter needs of people with special needs if their other needs are more urgent, or if their other needs result in people being unable to retain the shelter once it is provided.

• The provision of a community and care centre as part of every higher-density housing development is paramount as the focal point of activities and initiatives to help meet the needs of every person in the community, especially those with special needs such as women, children, people affected by HIV/AIDS, the elderly and disabled.
Endnotes

1. Wicht, A 2006
4. Wicht, A 2006
5. Wicht, A 2006
10. Department of Housing, 2003
11. City of Cape Town 2007:4
12. City of Cape Town 2007:4
15. Department of Housing 2003
19. Children’s Institute 2006
22. Department of Housing 2003
23. Wicht, A 2006
7. APPROPRIATE TENURE OPTIONS

Before the advent of democracy in South Africa, the majority of the population faced the possibility of removal and relocation based on racially motivated legislation. Since 1994, all South Africans have acquired the right to purchase land rights (freehold) and register ownership of land and property. However, despite political changes many citizens still do not have security of tenure, one of the most important components of adequate housing. Lack of tenure security leads to:

- loss of physical capital and sense of security;
- damage of social and informal networks for employment and safety nets; and
- inability to use the house as a resource when other sources of income are reduced.¹

According to the United Nations Housing Rights Programme the realisation process of the ‘right to housing’ comprises:²

“… packages of policies and practices rather than a single (ultimately unenforceable) right. Such packages include: ensuring secure tenure, preventing illegal and mass evictions, removing all forms of discrimination, and promoting participation, gender equity and freedom of information, especially with respect to land markets”.

The Housing White Paper (1997) affirms that for a large proportion of the population, lack of security of tenure is one of the “salient features and causes of the housing crisis in South Africa” (Section 3.2.2) and that “security of tenure is a key cornerstone of government’s approach towards providing housing to people in need” (Section 5.3.3). According to the supreme housing law in South Africa, the Housing Act (No.107 of 1997), all citizens of the country will, on a progressive basis, have access to “permanent residential structures with secure tenure” (1.vi(a)) and national, provincial and local spheres of government must ensure that housing development “provides as wide a choice of housing and tenure options as is reasonably possible” (2.1.c.i).

Although legislation (including the subsidy policy) allows for a variety of tenure options, government’s housing policy concentrated on individual ownership by ‘conventional’ households (excluding single persons, single-headed families and so on). This, despite the fact that a large proportion of the population makes use of rental accommodation and consists of a wide range of household types.

“… to be adequate to encourage or even permit development, security of tenure need not amount to ownership, nor need it last all the time. A lessee has security for the time of the lease and, for as long as the lessee complies with its conditions the law will give complete protection even against the owner of the land [or building].”³

The tenure forms in the higher-density case studies included:

- social rental housing (Carr Gardens and N2 Gateway (Phase 1), Washington Heights);
- co-operative housing, which is a form of social housing (Newtown Urban Village, Vashi);
- instalment sale, with eventual ownership (Stock Road);
- sectional title (Springfield Terrace); and
- individual ownership (Samora Machel, Missionvale, Sakhasonke Village, Vitas).

One of the most prominent findings is that not all households are knowledgeable about their tenure. As demonstrated in the case studies, this has serious implications for the way they exercise their rights and responsibilities regarding their housing arrangement. Another important factor is the appropriateness of the tenure to the income of the household (social housing versus public rental housing). These factors influence the way in which a household or community takes ‘ownership’ of its housing environment.

Project-linked subsidies were originally harnessed to deliver freestanding starter units, commonly referred to as ‘RDP housing’, resulting in unsustainable, new low-density peripheral settlements. In these ‘RDP housing’ projects poor people were ‘trapped in space’, often unable to afford the responsibilities associated with ownership.
Subsequently, government was obliged to divert its attention to alternative housing and tenure options, such as rental tenure through institutional subsidies, for medium- to higher-density housing projects. The institutional subsidy mechanism generally applies to medium- to higher-density and social housing, and is specifically targeted at institutions that provide tenure arrangements other than immediate ownership to subsidise beneficiaries. These could include tenure arrangements such as rental, instalment sale, shareblock or co-operative tenure. The mechanism provides a subsidy per beneficiary household (currently in the amount of R36,505) to institutions that provide housing for those beneficiaries. With the introduction of the social housing policy for South Africa (approved in June 2005), other finance mechanisms and grants are applicable to social housing.

The appropriateness and implications of the various tenure arrangements are discussed briefly below.

1. Ownership (freehold)

Ownership is the right to alienate property (i.e. to sell it or leave it to one’s heirs). The underlying principles are that the owner cannot be deprived of his/her property and that the owner is entitled to recover the property from any person who retains possession of it without his/her consent. This is the most secure form of tenure (for the individual owner) where formal transfer procedures have been followed. Section 25 of the Constitution protects the right of property owners. Expropriation of property by the government can only occur if it is in the public interest and if compensation is made.

Advantages:
• most legally secure form of tenure (for the person in whose name the property is registered);
• can leave the property to one’s heirs or sell the property;
• can use as collateral for loans;
• can make improvements to the property; and
• essential for incremental housing.

Disadvantages:
• ongoing costs (associated with rates, maintenance, capital upgrades, etc.) can be high for a low-income household;
• complex and expensive transfer procedures, as a result of which properties are sometimes sold informally or handed down from parent to child without the legal processes being followed;
• private individual ownership is a very misunderstood tenure option and as it is a highly individualised form of tenure there is usually little scope for engaging with the implications of ownership (compared with Sectional Title or communal ownership);
• usually results in ‘one house on a plot’ and encourages urban sprawl; and
• individual ownership is not necessarily a secure tenure option for other members of the household, as they do not necessarily have any tenure rights. However, this can potentially be solved by registering ownership of the property in the name of more than one adult member of the household; other use rights, such as those of a long-term tenant, can also be registered on a title deed.

Because of a pressing need to accommodate more households on smaller parcels of land while using the project-linked subsidy, which implies individual ownership, the Missionvale, Samora Machel and Sakhasonke Village projects experimented with medium-density typologies.

2. Sectional Title

The Sectional Titles Act of 1986 provides for the division of buildings, e.g. blocks of flats, into sections and common property and for the acquisition of separate ownership in sections, together with joint ownership
of the common property. Under Sectional Title, the person becomes the separate owner of a particular unit and joint owner of the common property. All the joint owners together form the Body Corporate. A Body Corporate, consisting of all owners of units, is set up for every sectional title scheme (other institutions, such as a Section 21 company, can also be used). Voting usually happens according to the size of the unit owned. The Body Corporate is responsible for the repair, upkeep, control, management and administration of the common property and for the payment of rates, taxes, service charges, and insurance premiums. The Body Corporate elects a Board of Trustees to be responsible for the upkeep of the common property and to collect and manage the money that owners pay for maintenance. The Body Corporate can also hire employees, buy and sell units, and so on.

Sectional Title offers most of the advantages of private ownership but there is the risk of the Body Corporate going bankrupt, which could result in individual owners losing ownership of their units. The Body Corporate can also restrict the owner’s rights in various ways, e.g. by limiting the number of people who can stay in a unit or by having to approve any major alterations to the unit.

Sectional Title is the only way to provide ownership of individual units in a block of flats. It is not ideally suited to the poor with the limits of the current housing subsidy scheme, as it does not facilitate incremental housing (which means that a completed unit will have to be provided upfront). Additionally, a monthly levy to cover operating costs will usually need to be paid over and above rates, service charges and loan repayments. Sectional Title can be particularly risky, because Bodies Corporate are usually voluntary associations and are loosely regulated. Institutional subsidy projects can be converted to Sectional Title after four years. However, the Research Report for the Development of a Medium-density Housing Programme for the National Department of Housing states unequivocally that sectional title is “an unsuitable option for the medium-density housing programme for reasons related to cost, financial and other risks to the beneficiary and the state, and onerous compliance and management issues”. The Springfield Terrace case study testifies to the difficulties and complexities of this type of tenure. However, the project also demonstrates how, through the commitment of a few Bodies Corporate, sectional title is able to provide security of tenure.

3. Communal ownership

Communal ownership can take a variety of forms. In all cases, the property is jointly owned. Members/shareholders have rights to occupy specific units based on their membership or because they are shareholders of the institution, as defined in the Use Agreement. Members/shareholders may be able to sell their rights, but there may be restrictions about to whom the rights may be sold. It is more secure than rental but not as secure as ownership as there is a risk of non-payment by other members or of bad management. Members/shareholders may lose all rights to the property if the institution goes bankrupt.

Advantages:
• communal ownership can greatly facilitate strong social and economic support networks, which are particularly important for people with low incomes. There is a strong tradition of co-operative societies in South Africa, e.g. stokvels (savings clubs) and burial societies;
• owners can leave the rights to heirs or sell the rights, with the approval of the institution; and
• it enables high-density, multi-storey housing and lower bulk infrastructure costs per unit.

Disadvantages:
• risk of mismanagement of institution or of non-payment by some members;
• individuals usually cannot use their share in the property as collateral;
• can be more expensive as there may be additional administrative costs; and
• a low-income communal tenure institution would probably require ongoing local government support in order to be sustainable.
The two types of communal ownership discussed here are co-operatives and communal property associations.

### 3.1 Co-operatives

Co-operatives are widely used internationally as a vehicle for the communal ownership of affordable housing. They generally follow the basic principles of the International Co-operative Alliance, the most important of which is ‘one member, one vote’. In a co-operative, all residents are members/shareholders (the ‘shares’ can be nominal amounts of money) and jointly own the property. Members elect a Board of Directors to manage the co-operative. Each household has one vote in the General Meetings to take major decisions about the co-operative. Members have rights to occupy specific units, as defined in ‘use agreements’. Co-operatives are more secure than rental but not as secure as individual ownership, as there is a risk of non-payment by some members or of bad management.

The ‘trading co-operative’ is the only one of three types of co-operative that can be used for medium-density housing, according to the *Research Report for the Development of a Medium-density Housing Programme for the National Department of Housing*. The report states that co-operatives are relatively less suitable for medium-density housing because:

- the legal compliance requirements in respect of co-operatives are more onerous;
- a dormant co-operative can be struck off the register of co-operatives;
- the style and substance of the activities of a co-operative’s Board of Directors are essentially identical to boards of company directors, with similar onerous duties, responsibilities and liabilities;
- conflicts of interest arise where the identities of owners, property managers and tenants become merged and render the co-operative vulnerable; and
- members may lose all rights to the property if the institution goes bankrupt.

An advantage of co-operatives is that communal ownership can facilitate strong social and economic support networks.

The Social Housing Foundation received support from the National Department of Housing and the Parliamentary Portfolio Committee for Housing to continue to grow the co-operative housing movement, because of the Foundation’s institutional knowledge and capacity. However, if housing co-operatives are to grow and be sustainable, more emphasis needs to be given to the capacitation of the organisation or building of the organisation. Municipalities, provincial departments of housing and their regional offices, as well as sector role players, must be capacitated to ensure continued support of co-operatives.

### 3.2 Communal Property Associations

Communal Property Associations (CPAs) are similar to co-operatives. The Communal Property Associations Act, No. 28 of 1996 regulates CPAs, which are legal entities set up to own and manage immovable property in common on behalf of communities in terms of written constitutions. CPAs can take a variety of institutional forms, for example Section 21 companies, trusts or voluntary associations, but their constitutions have to follow the set of principles in the Act and have to be registered.

CPAs are intended for disadvantaged communities that have had land donated, sold or transferred to them, and that have the approval of the Minister of Land Affairs. The original purpose of the CPA Act was to provide a statutory vehicle to enable beneficiaries of South Africa’s land reform programme to access land on a communal basis and it was intended for use with predefined, homogenous communities in rural areas. CPAs have therefore seldom been used in urban areas. In addition, banks are reluctant to lend to CPAs, as membership of a CPA is sometimes perceived as being less of a real right than, for instance, membership of a co-operative. CPAs are basically voluntary associations but are registered and regulated, which can be an advantage. It may be easier to get funding for such a body, for example. CPAs need to have defined beneficiaries at the inception of the project.
Issues to be addressed in the constitutions of Communal Property Associations include:

- identity of the community;
- qualifications for membership;
- classes of membership and rights of different classes;
- rights of members to use of the property;
- whether membership is based on individuals or families;
- grounds and procedures for terminating membership (and what happens to that member’s rights and property), whether members may sell their rights and to whom, what happens to members rights on their death;
- details of the committee and the general meeting and annual general meeting; and
- disciplinary matters.

The Director-General of Land Affairs has certain powers to monitor and intervene in the affairs of CPAs. Some of the principles that the constitutions of Communal Property Associations require are:

- fair and inclusive decision-making processes – membership can only be terminated on reasonable grounds after a fair hearing;
- equality of membership – the creation of different classes of membership must be based on equitable criteria; and
- democratic process – all members must have equal rights.

4. Leasehold/rental

Internationally, rental is the predominant form of tenure in most cities. Accommodation can be rented from:

- public authorities;
- housing institutions/associations (social housing);
- large-scale private-sector landlords; and
- small-scale landlords.

Rental housing is especially suited to low-income households as it facilitates labour mobility, which can be an important survival strategy. Despite it being one of the less secure forms of tenure in purely legal terms (in South Africa, lease agreements are terminable on one month’s notice), rental tenure is widely regarded as the most appropriate form of tenure for medium- to higher-density housing. Some of the main advantages of rental housing are:

- a clear distinction of roles between landlord and tenant;
- legal compliance issues are simple relative to other forms of tenure;
- a dispute resolution forum exists in the form of the Rental Housing Tribunal to deal with disputes between landlords and tenants;
- it affords government the option of retaining ownership of its housing stock provided through the provision of institutional housing subsidies; and
- in a context of high unemployment, rental allows tenants to move with relative ease from place to place in search of work or career development opportunities and enhances labour mobility.

According to Adebayo, the provision of rental housing in inner-city areas needs to be pursued in South Africa:

“Bringing people close to the city is widely recognised as a positive move, not only on account of its ability to open up opportunities for the poor, but also because of the potential to utilise already existing infrastructure, and to use costly land optimally. Some people have however had the misconception that compactness, bringing the poor into the inner city residential areas, has the potential to turn the city into urban slums. European cities have proved that there is no basis for this argument. Towards this end, some of the vacant buildings..."
Currently, the only subsidy mechanism that includes rental housing for low-income earners is the recently introduced Community Residential Units Programme (replacing the National Hostel Re-development Programme). Miloon Kothari, the United Nations Special Rapporteur on adequate housing as a component of the right to an adequate standard of living and on the right to non-discrimination in this context, undertook a mission to South Africa in April 2007 at the invitation of the government. In his report on the visit, he expressed unease at the high consumer debt in South Africa and stated that the International Monetary Fund estimated that South Africa’s real estate prices had increased by 200% between 1997 and 2005. He raised concerns about the critical shortage of public rental housing stock for low-income households and affirmed that market driven price increases are leading to a shortage of accessible and affordable rental housing. He recommended that:

“... all possible measures be taken in order to ensure equal opportunities in access to housing. There is an urgent need to restructure the availability of rental housing for low-income groups, to guarantee security of tenure for tenants and to formulate a specific national policy for groups with specific housing requirements (special housing needs).”

In terms of the institutional subsidy regulations, the tenure form can be either:
- rental;
- rent-to-buy: tenants obtain individual ownership of units after renting for a certain period, usually a minimum of four years. During the rental period, tenants can accumulate savings built into their monthly charges that will be deducted from the purchase price. If a tenant leaves their unit before taking transfer, they are entitled to a repayment of any accumulated savings; or
- installment sale (payment of purchase price plus market related interest through monthly installments over a minimum of four years). In terms of the Alienation of Land Act of 1981, transfer of the property can only take place once the full purchase price has been paid.

5. Informal tenure

Informal tenure is where people do not have any formal security of tenure. Residents of informal settlements and households living in backyards do have certain rights in terms of legislation. The Prevention of Illegal Eviction from and Unlawful Occupation of Land Act, No. 19 of 1998 prescribes the procedures to be followed in evicting unlawful occupiers of land. The court needs to take the rights and needs of the elderly, children, disabled people and women-headed households into account. In addition, where unlawful occupiers have occupied the land for more than six months, alternative land needs to be made available for relocation.

Where an informal settlement is being upgraded and has been declared a land development area in terms of the Development Facilitation Act, any person who has been in peaceful and undisturbed occupation of that land for a continuous period of not less than five years is deemed to have certain rights to the land (‘beneficial occupation’).

The Extension of Security of Tenure Act, No. 62 of 1997 applies in rural areas and in agricultural areas within urban areas. In terms of this Act, people who occupy land with the consent of the owner or person in charge (including people who have ‘continuously and openly’ occupied private land for three years) have certain tenure rights. Someone who has lived on a piece of land for 10 years and has reached the age of 60 cannot be evicted.
Security of tenure is one of the most important components of adequate housing. Many South African citizens still do not have security of tenure, despite having acquired the right to purchase land rights (freehold) and register ownership of land and property. This results in their loss of physical capital and sense of security, damage of social and informal networks for employment and safety nets and their inability to use the house as a resource when other sources of income are reduced.

Although legislation (including the subsidy policy) allows for a variety of tenure options, government’s housing policy is largely concentrated on individual ownership by ‘conventional’ households (excluding single persons, single-headed families and so on) - this, despite the fact that a large proportion of the population makes use of rental accommodation and consists of a wide range of household types.

Tenure choices must be guided by the advantages and disadvantages of various tenure forms and its applicability to particular community contexts and income levels.

It is essential that tenants become knowledgeable of their tenure types in order to exercise their rights and responsibilities and to take ‘ownership’ of their housing environment. In this regard, community capacity development by government and its agents, as well as NGOs and CBOs, is imperative as part of the housing delivery process. Another important factor is the appropriateness of the tenure to the income of the household (social housing versus public rental housing). These factors influence the way in which a household or community takes ‘ownership’ of its housing environment.

Rental is the most widely used tenure option for medium-density housing and is especially suited to low-income households. The provision of affordable rental housing (public rental) in inner-city areas needs to be pursued in South Africa for households with monthly incomes below R2,500.
Endnotes

2. UNCHS 2001:32 in Gilbert A 2003
3. Dekker, HAL 2003:56
4. This section is primarily based on work done by the Development Action Group 2003b and Urban Sector Network 1999 on tenure options
5. Syn-Consult 2003:81
8. Syn-Consult 2003
10. Adebayo, A and P Adebayo 2000
11. UN Human Rights Council 2007:27
8. THE CHOICE BETWEEN SOCIAL AND PUBLIC RENTAL HOUSING

Central to the National Department of Housing’s strategy is the development of social housing through accredited social housing institutions. Both the Stock Road and N2 Gateway (Phase 1) case studies illustrate however that social housing, in its present form, is not affordable for the majority of low-income urban citizens in need of housing. Moreover, there are no other state subsidised rental options providing well-located housing to the urban poor (except insignificant numbers of transitional and communal housing options). In the long run the recently introduced Community Residential Units Programme will expand the rental options available but the current absence of a public rental housing instrument for low-income households is evident in the struggles of many organised groups including the Rainbow Housing Co-operative.

Rainbow Housing Co-operative

The Rainbow Housing initiative started in 1996 when urban dwellers, generally earning monthly incomes below R3,500, working and living within or around the Atlantic Seaboard area in Cape Town, organised themselves into a housing co-operative based on the members’ need for adequate housing with security of tenure. The group’s 300 members mainly include domestic workers, chauffeurs, child minders, caregivers, restaurant and hotel staff, security guards, and care takers. The Co-operative’s lobby efforts and engagements with a wide range of stakeholders, including national, provincial and local government departments, over 12 years testifies to the efforts of this group of poor people to assert their right to adequate housing. Based on the needs and affordability levels of the cooperative, they approached all three levels of government to cooperate in providing them access to well-located land and/or buildings; security of tenure in the form of public rental housing or cooperative housing (a form of social housing); and institutional, financial, management, capacity building and facilitation assistance. Despite their unrelenting efforts, no concrete results have been achieved to date. Over the past twelve years, officials and politicians have cited the following reasons for the lack of progress in addressing the co-operative’s housing needs:

- lack of staff and human resources in (especially local) government
- difficulty within the existing housing financing framework to deliver well-located social housing for households with incomes less than R3,000 per month
- lack of provision of well-located public rental housing
- lack of political will to accommodate low-income households in well-located areas
- difficulty to access well-located land and high costs of developing affordable housing that is well-located
- lack of inter-governmental cooperation
- lack of willingness to explore creative solutions to access existing buildings or vacant State land that are well-located

The experience of the Rainbow Co-operative is hardly surprising, given that the operation of the land and property market excludes the majority of South Africans from accessing adequate housing. This is because the unregulated market prices land beyond the reach of the poor and even the lower middle class population. This limits the capacity of the majority of South Africa’s population to access housing freely in the market, creating a dependence on the State to supply housing. This reality has contributed significantly to growth in the numbers of people living in informal settlements and in overcrowded housing. Within this context the provision of affordable medium-density public rental housing for low-income households in well-located areas is of critical importance.
I. Social housing

In the new social housing policy for South Africa, social housing is defined as:¹

“The … a rental or co-operative housing option for low-income persons at a level of scale and built form which requires institutionalised management and which is provided by accredited social housing institutions or in accredited social housing projects in designated restructuring zones”.

The definition relates to the overall intentions of the Social (Medium-density) Housing Programme. Consistent with the Social Housing Policy for South Africa: Towards an enabling environment for social housing development,² the Social Housing Programme (a form of rental housing) has two primary objectives:³

1. To address structural, economic, social and spatial dysfunctionalities thereby contributing to government’s vision of an economically empowered, non-racial, and integrated society living in sustainable human settlements.
2. To improve and contribute to the overall functioning of the housing sector and in particular the rental sub-component, especially insofar as social housing is able to contribute to widening the range of housing options available to the poor.

The programme recognises the need for institutional mechanisms “to hold rental housing as a public asset over a period of time, for the benefit of a range of income groups”.⁴ Low-income persons are broadly defined in the policy as:⁵

“… those whose household income is below R7,500 per month. Income mix prescriptions for individual projects will specify desired percentages of participants for different income categories within this broad band and ensure a good spread across the range R1,500–R7,500”.

Social housing will receive significant resources in future, according to the new social housing policy. However, the amount and level of critical debate on the sector are arguably disproportionate to the impact this sector is having, and will most likely continue to have, on South Africa’s housing environment.⁶ DAG therefore argues that, due to its limitations, complexities, and the difficulty of delivering at scale, social housing should be viewed as one of a range of housing instruments aimed at meeting the needs of a specific group of citizens (i.e. the gap market — monthly household incomes of broadly R3,500–R7,500), and contributing to the overall functioning of the housing sector.

Social housing cannot be seen as the panacea for housing the poor. The social housing policy justifies the magnitude of grants envisaged in terms of the role that social housing will play in the restructuring of South African society, although only approximately 18% of those between the ages of 15 and 65 who are employed earn R3,201–R7,500.⁷ Currently the funding instruments for the facilitation of institutional housing by government are the institutional subsidy, the Community Residential Units Programme and a ‘Fast Tracking Programme’ for Transitional Housing.⁸

The new social housing policy identifies five types of grants that will be applied in restructuring zones.⁹ These are well-located strategic areas identified for the location of social housing which will attempt to contribute to spatial, social and economic restructuring. The grants are:

1. Social Housing Restructuring Capital Grant.
2. Staff Gear-Up Grant.
3. Project Acquisition and Feasibility Grant.
4. Pre-accreditation Support Grant.
5. General Capacity Building Grants.
Of the five, the first is by far the most important because it involves a very significant direct contribution to the capital costs of implementing a social housing project. The policy states that it is important from a guidelines perspective to stress that: “the primary policy objective of the social housing programme is restructuring, not mass delivery”. Capacity building and capital grants will only be available in designated restructuring zones, while outside these zones the institutional subsidy may be used for rental development. Subsidies in the form of capital grants in restructuring zones may be as much as three times higher than institutional subsidies.

The social housing policy contends that one of the most significant policy shifts is from thinking about housing in relation to individuals and individual housing units, to thinking in terms of projects. Appropriate targeting will be a pre-condition for the award of a project grant (subsidy). Each project will be required to specify a range of housing projects targeted at income groups appropriate to the context and to the restructuring aims of the social housing policy. Rents would be set on the basis of the rental that people in the sub-market could pay (as a proportion of income). The difference between rental revenues and the cost of providing the units will be subsidised via the grant, which will be calculated with reference to the project as a whole rather than to particular unit types. However, the units earmarked for the very poor will attract proportionately more subsidy than those meant for low-income people.

According to the social housing policy, eligibility for the capital grant will be based on requirements in respect of the nature of the social housing institution and its location, or the accreditation of a suitable project. To qualify for the capital grant on every unit, at least 30% of units in a project must contribute to deep down-market reach, with maximum rentals no higher than R2,500. Here the deep down-market refers to rents falling between the lowest possible rental, which is operating cost per unit assumed to be R500 per month and implying an income of R1,500 per month. However, according to calculations done by the Support Programme for Social Housing in April 2006, a minimum of R2,400 household monthly income is required to be able to pay for rents and services.

This means that social housing is not about the provision of affordable (rental) housing for the very poor, except for transitional, special needs and communal housing, of which limited stock is produced. The Madulamoho Social Housing Institution and other institutions focusing specifically on transitional and communal housing are able to provide accommodation (generally including rooms with shared facilities) in the inner city of Johannesburg to people in the lower income market who earn less than R3,500 per month. In some communities, unrealistic expectations were created by the prospect of access to social housing.

Therefore, in the South African context, the term ‘social’ housing is ‘social’ insofar as it uses government subsidies for households earning between R2,500 and R7,500, but not in the sense that it is housing intended for the very poor (households earning below R2,400). According to a UN-Habitat publication on rental housing, South African social housing projects such as Carr Gardens “do not cater for the really poor” and “Johannesburg Housing Company is hardly a typical social housing foundation insofar as it was established with a R40 million capital grant from the European Union. Other social housing foundations will not have this windfall capital to rely on”.

This highlights the absence of an appropriate housing instrument to provide adequate, affordable and well-located housing to millions of poor households. The UN document concludes by remarking that South Africa’s policy is “rather traditional insofar as it relies on subsidies to social housing foundations. It is also based on some rather questionable practical and financial assumptions”.

According to the social housing policy the primary dimension of restructuring is to address spatial constraints relative to economic opportunity and revitalisation. Social housing should be used strategically, either to open up areas which have major economic opportunities and from which poor people have been excluded, or to protect poor people from being displaced from areas with economic opportunity (e.g.
inner cities experiencing a revival of property values and where rents are escalating). With regard to new housing construction and conversions, at current subsidy levels social housing institutions are failing to achieve returns on capital sufficient to match inflation. Yet, despite its problems, the social housing model in its current form is especially suitable for inner-city renewal targeted at beneficiaries earning more than R2,500 per month. However, this does not solve the housing dilemma of those earning monthly salaries below R2,500 who work in well-located areas, neither does it provide for additional funding of institutional housing outside restructuring zones.

2. Rental housing demand

Demand for rental housing is not only a function of income, but also of the availability of infrastructure, easy access to places of work, and an array of other factors. In the Western Cape the impact of migration on population growth is relevant as the province experiences a net gain from in-migration. The Provincial Housing Plan comments that migration is influenced by the package of opportunities provided by the place: relatively improved access to services together with economic opportunities can trigger a pull factor which is exacerbated by the push factor of a lack of these services in the rural areas. The migration patterns combined with the age/sex ratio point to the likelihood of an increase in the number of the poor in the city. In addition, high numbers of inadequately housed backyard dwellers and overcrowding of formal dwellings increase rental demand.

It is expected that the aggregate total and effective demand for social housing will increase. The Social Housing Foundation has noted the following observations regarding rental demand:

- rental housing offers high levels of locational flexibility and provides an initial step into the urban market;
- the poor struggle to access the limited rental opportunities in good locations that are provided by the formal market; and
- a range of rental options that cater for the specific needs of the poor are required as part of any housing strategy.

Research for the Social Housing Foundation states that the demand for affordable rental housing was estimated at 1.8 million in 2001. The total demand for a variety of rental housing types is expected to grow at around 5% until 2011, or to approximately 93,467 units. Gardner argues that the rental-housing sector is possibly the second most efficient housing market (after the high-income primary market) in South Africa, despite the policy vacuum. However, in international terms, the local rental sector is relatively underdeveloped.

Table 16: National rental types, number of households and providers

<table>
<thead>
<tr>
<th>Type of rental</th>
<th>Number of households</th>
<th>Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal rental</td>
<td>0.76 million</td>
<td>• Small landlords</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Property managers/owners/developers</td>
</tr>
<tr>
<td>Informal rental</td>
<td>0.75 million</td>
<td>• Backyard renters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Slum landlords</td>
</tr>
<tr>
<td>Company</td>
<td>0.10 million</td>
<td></td>
</tr>
<tr>
<td>Informal settlements</td>
<td>0.81 million</td>
<td></td>
</tr>
<tr>
<td>Non-profit sector</td>
<td>• Approximately 35,000 units</td>
<td>83 SHIs (30 housing co-operatives, 43 SHIs, 10 transitional)</td>
</tr>
<tr>
<td>Public sector</td>
<td>• Existing flats and houses (approximately 300,000 units)</td>
<td>Municipalities</td>
</tr>
<tr>
<td></td>
<td>• Existing public hostels (approximately 156 with 279,333 residents)</td>
<td>• Three options:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Retain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Demolish and rebuild</td>
</tr>
</tbody>
</table>
Table 17: National demand progression for rental units (Viruly 2004)22

<table>
<thead>
<tr>
<th>Province</th>
<th>2001</th>
<th>% Growth 2006</th>
<th>% Growth 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Cape</td>
<td>162,924</td>
<td>2,86%</td>
<td>2,80%</td>
</tr>
<tr>
<td>Free State</td>
<td>111,920</td>
<td>3,87%</td>
<td>3,77%</td>
</tr>
<tr>
<td>Gauteng</td>
<td>654,486</td>
<td>7,21%</td>
<td>7,01%</td>
</tr>
<tr>
<td>KwaZulu-Natal</td>
<td>344,020</td>
<td>5,73%</td>
<td>5,43%</td>
</tr>
<tr>
<td>Limpopo</td>
<td>53,161</td>
<td>5,49%</td>
<td>5,29%</td>
</tr>
<tr>
<td>Mpumalanga</td>
<td>100,642</td>
<td>5,23%</td>
<td>4,93%</td>
</tr>
<tr>
<td>Northern Cape</td>
<td>30,347</td>
<td>6,05%</td>
<td>5,81%</td>
</tr>
<tr>
<td>North-West</td>
<td>128,517</td>
<td>3,17%</td>
<td>2,99%</td>
</tr>
<tr>
<td>Western Cape</td>
<td>232,406</td>
<td>4,17%</td>
<td>3,98%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,818,423</td>
<td>5,23%</td>
<td>5,14%</td>
</tr>
</tbody>
</table>

The type of rental units as per different income groups in 2001 is set out in the table below:21

Table 18: Type of rental units in South Africa

<table>
<thead>
<tr>
<th>Type of rental housing</th>
<th>R0–R800 (%)</th>
<th>R801–R3,200 (%)</th>
<th>R3,201–R6,400 (%)</th>
<th>TOTAL (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>House or brick structure on separate stand or yard</td>
<td>50,24</td>
<td>44,76</td>
<td>41,67</td>
<td>44,17</td>
</tr>
<tr>
<td>Traditional dwelling/hut/structure made of traditional materials</td>
<td>1,84</td>
<td>3,23</td>
<td>6,51</td>
<td>4,51</td>
</tr>
<tr>
<td>Flat in block of flats</td>
<td>25,63</td>
<td>14,85</td>
<td>11,46</td>
<td>14,90</td>
</tr>
<tr>
<td>Town/cluster/semi-detached house (simplex, duplex, triplex)</td>
<td>5,55</td>
<td>2,74</td>
<td>1,95</td>
<td>2,80</td>
</tr>
<tr>
<td>House/flat/room in back yard</td>
<td>8,16</td>
<td>10,98</td>
<td>8,13</td>
<td>9,28</td>
</tr>
<tr>
<td>Informal dwelling / shack in back yard</td>
<td>3,55</td>
<td>11,97</td>
<td>13,41</td>
<td>11,39</td>
</tr>
<tr>
<td>Informal dwelling / shack NOT in back yard</td>
<td>2,21</td>
<td>7,95</td>
<td>13,32</td>
<td>9,53</td>
</tr>
<tr>
<td>Room/flatlet not in back yard but on shared property</td>
<td>2,45</td>
<td>3,15</td>
<td>3,20</td>
<td>3,07</td>
</tr>
<tr>
<td>Caravan or tent</td>
<td>0,35</td>
<td>0,34</td>
<td>0,31</td>
<td>0,33</td>
</tr>
<tr>
<td>Private ship/boat</td>
<td>0,02</td>
<td>0,03</td>
<td>0,04</td>
<td>0,03</td>
</tr>
</tbody>
</table>

In the table above formal rental is classified as a ‘house or brick structure on separate stand or yard’, ‘flat in block of flats’, ‘town/cluster/semi-detached house (simplex, duplex, triplex)’. In the R0–R800 income group 81.42% of households have access to formal rental housing, with 62.35% and 59.64% in the R801–R3,200 and R3,201–R6,400 categories respectively. This suggests that the majority of households in all three income groups who rent, are renting in a house or brick structure on a separate stand or yard. The fact that flats are only the fourth highest housing type in the R3,200–R6,400 income group may be indicative of the limited supply of affordable rental flats for this income group.

The following table from the Viruly report provides projections on the demand for different types of rental housing in South Africa for the period 2001–2011. According to their projections, the expected national demand for formal rental accommodation is to be just over 80,000 units per annum (highlighted in grey in the following table) and just over 400,000 in total for the next five years (highlighted in blue). To meet demand, the total number of units for the lower- to middle-income rental market needs to increase by 133,746 units per annum and by 668,731 units over the next five years.
Table 19: Projections: Demand for different types of rental housing in South Africa

<table>
<thead>
<tr>
<th>Type of rental housing</th>
<th>2001–2006</th>
<th>2006–2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 Years</td>
<td>/Annum</td>
</tr>
<tr>
<td>House or brick structure on separate stand or yard</td>
<td>224,510</td>
<td>44,902</td>
</tr>
<tr>
<td>Traditional dwelling/ hut/structure made of traditional materials</td>
<td>21,849</td>
<td>4,370</td>
</tr>
<tr>
<td>Flat in block of flats</td>
<td>81,012</td>
<td>16,202</td>
</tr>
<tr>
<td>Town/cluster/semi-detached house (simplex, duplex, triplex)</td>
<td>14,630</td>
<td>2,926</td>
</tr>
<tr>
<td>House/flat/room in back-yard</td>
<td>53,613</td>
<td>10,723</td>
</tr>
<tr>
<td>Informal dwelling/shack in back yard</td>
<td>64,457</td>
<td>12,891</td>
</tr>
<tr>
<td>Informal dwelling/shack NOT in back yard</td>
<td>49,493</td>
<td>9,899</td>
</tr>
<tr>
<td>Room/flatlet not in back yard but on shared property</td>
<td>16,889</td>
<td>3,378</td>
</tr>
<tr>
<td>Caravan or tent</td>
<td>1,692</td>
<td>338</td>
</tr>
<tr>
<td>Private ship / boat</td>
<td>206</td>
<td>41</td>
</tr>
<tr>
<td>TOTAL</td>
<td>528,351</td>
<td>105,670</td>
</tr>
</tbody>
</table>

Between 30% and 36% of South African households live in rented accommodation, which reflects the emphasis on ownership tenure in recent housing policy. This is lower than international trends in developing countries. Formal rental supply is increasing in South Africa, but not in the affordable rental sector where there is a lack of public rental stock. Formal housing options available to households earning R800–R3,500 per month are declining together with the rate of subsidised housing delivery. Increasing unemployment, declining household incomes and the impact of HIV/AIDS suggest that households will be able to afford less, thus limiting their housing options and, in all probability, this will impel them to informal settlements, increasing the informalisation of housing in South Africa’s cities. Nationally, rental supply (for urban households) appears as follows:
The majority of households in the worst housing conditions are very poor. It would be inappropriate to accommodate them in minimum standard ownership housing for a number of reasons:

- their choice of tenure (rental vs ownership) - at the moment very few formal subsidised rental options are available. Households may want to rent in a specific area, but because of limited choice it is impossible;
- their ability to afford owned accommodation;
- the ability to access the newly subsidised stock - housing is insufficient; and
- the suitability of the accommodation in relation to their household size.\(^{28}\)

According to research by Shisaka\(^{29}\) using the October Household Survey (1999) and the Labour Force Survey (2005) there is a 4% decline in the proportion of households in rental accommodation, from 31% in 1999 to 27% in 2005. From the diagram above it is clear that there are households living in informal settlements and in informal rental accommodation who earn up to R7,000 per month. The table below depicts the (national) monthly wage income according to the September 2004 Labour Force Survey. These figures provide an indication of levels of affordability.

**Table 20: National monthly wage income: 2004**

<table>
<thead>
<tr>
<th>Monthly Wage Income</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0–R2499</td>
<td>35%</td>
</tr>
<tr>
<td>R2500–R7499</td>
<td>17% (approximate gap market)</td>
</tr>
<tr>
<td>R7500+</td>
<td>10%</td>
</tr>
</tbody>
</table>

In terms of housing affordability, more than 70% of the South African population is unable to afford social housing. In general, households earning below R2,500 per month end up in informal settlements, backyard accommodation or RDP housing. Only 17% of the population could potentially benefit from social housing. Although social housing presents opportunities for social integration and restructuring, its major shortcoming is that it does not make a significant contribution to meeting housing demand. In the absence of gearing social housing to scale, there are certain misgivings about its ability to truly contribute to social integration and restructuring.

### 3. Rental housing supply

Currently, limited formal rental opportunities are being developed for households unable to pay more than R1,900 per month (i.e. with monthly incomes of roughly R7,500 per month). Even with the social housing sector targeting this segment of the market (the so-called ‘gap market’), supply will not meet demand. Households who cannot afford to pay rentals of more than R1,500 per month (i.e. with incomes of less than R6,000 per month) have virtually no formal rental housing choices other than renting in overcrowded units.

At present, there are no authoritative figures specifying the supply of rental housing in the country. However, research, reviews and surveys undertaken provide an indication of the situation. The National Department of Housing reports the delivery of just over 34,000 institutional housing units between 1996 and December 2005 across the country. In the absence of official figures, a Trafalgar report\(^{30}\) shows that the inner cities of Johannesburg, Durban, Cape Town, Pretoria, Port Elizabeth and East London accommodate approximately 400,000 people. Of these, the majority are in rental accommodation, more often than not poorly maintained. A review of the rental housing sector undertaken by Sigodi Marah Martin and Matthew Nell and Associates in 2001\(^{31}\) indicated that the delivery of formal rental housing was on the decline.

Similarly, research for Finmark Trust by Shisaka and the CSIR in 2006\(^{32}\) showed that the rental sector had decreased in size in respect of the overall housing sector (from 31% in 1999 to 27%, or 3.5 million households, in 2005). [In spite of this, they found that the number of households living in rented accommodation had increased...](anomalies in text possibly due to the page break)
by approximately 100,000 households from 1999–2005. Notwithstanding this, the total number of households occupying formal rental units decreased by about 100,000 in the same period, while informal household rental (i.e. backyard dwellings) and other forms of rental increased. Furthermore, Shisaka found that the mean income of households in formal rental accommodation declined in real terms from R3,200 per month in 1999 to R3,100 (in 1999 Rands) in 2005. Incomes of households renting backyard dwellings also declined in real terms from a mean of R1,500 to R1,400 (in 1999 Rands). The following table depicts these findings. The 1999 October Household Survey (OHS) and the 2005 Labour Force Survey (LFS) statistics were used.

### Table 21: Growth in the rental housing sector from 1999 to 2005

<table>
<thead>
<tr>
<th></th>
<th>OHS 1999</th>
<th>LFS 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Formal rental</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of households (hh) (millions)</td>
<td>1,6</td>
<td>1,5</td>
</tr>
<tr>
<td>%</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Mean hh income (R)</td>
<td>3,200</td>
<td>4,100 (3,100 in 1999 Rands)</td>
</tr>
<tr>
<td><strong>Household rental</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. hh (millions)</td>
<td>1,0</td>
<td>1,1</td>
</tr>
<tr>
<td>%</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Mean hh income (R)</td>
<td>1,500</td>
<td>1,800 (1,400 in 1999 Rands)</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. hh (millions)</td>
<td>0,8</td>
<td>0,9</td>
</tr>
<tr>
<td>%</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Mean hh income (R)</td>
<td>1,500</td>
<td>2,200 (1,700 in 1999 Rands)</td>
</tr>
</tbody>
</table>

The figure opposite illustrates the inadequate supply of public and private rental housing. Limited opportunities are being developed that target households earning below R7,500, especially for those earning below R3,500. Current supply does not meet demand and annual household growth; neither does it support affordability thresholds of different sub-markets.

It is clear that the demand for rental accommodation will grow whatever government does. However, the kind of rental housing that will be supplied can be improved by more informed government action. Moreover, the potential of the rental sector to contribute towards urban renewal, restructuring of the apartheid city, and poverty alleviation is increasingly recognised. However, the rental instruments that are currently available do not meet the needs of the majority of the urban population and do not contribute sufficiently to the provision of access to affordable adequate housing.

It is clear that there is a demand for a different form of subsidised rental housing. Adequate, dignified, well-planned and managed public rental housing is generally underestimated as a collective asset that can be used by successive generations for sustainable human settlement advancement. To achieve this, it is important that government and its partners expand
and revise their rental housing instruments, as rental housing remains a popular form of housing for low-, middle- and high-income earners in both the developed and developing world.

To address the range of different needs a greater differentiation of housing instruments is necessary, including the provision of public rental housing. The Community Residential Units Programme was recently introduced by government (December 2006) with the objective of:

“... assist[ing] low-income persons and households earning below R3,500 per month, who are not able to be accommodated in the formal private rental and social housing market. The Programme seeks to bridge the divide between social housing and lower markets which posed a significant problem”.36 The outcomes of this Programme will be assessed in the future.

Notwithstanding the gains government has made in delivery of housing subsidies to the poor, it is assumed that the increase in value of those houses delivered to date has not been proportional to the rate of inflation. An alternative and more differentiated approach is required to create an improved quality of life for all and a more sustainable foundation for the poor.37
Guidelines

- The operation of the land and property market excludes the majority of South Africans from accessing adequate housing due to an unregulated market pricing land beyond the reach of the poor and even the lower middle class population. This limits the capacity of the majority of South Africa’s population to access housing freely in the market, creating a dependence on the State to supply housing and contributing significantly to growth in the numbers of people living in informal settlements and in overcrowded housing. This highlights the absence of an appropriate housing instrument to provide adequate, affordable and well-located housing to millions of poor households.

- The rental housing sector has the potential to contribute significantly towards meeting critical housing needs, urban renewal, restructuring of the apartheid city, and poverty alleviation, especially for people who work in well-located areas. However, government’s current choice of rental instrument (social housing) does not meet the needs of the majority of the urban population and does not contribute sufficiently and significantly to the provision of affordable and adequate rental housing.

- Social housing as it is currently operating in South Africa serves a small segment of the population, is not truly social, and is unaffordable to households with monthly incomes below R2,500. The social housing model should be revised to enable a significantly larger number of households to access affordable rental housing and to make social housing ‘social’. The 30%/70% deep down-market split in social housing projects should be attained in all social housing projects.

- The re-introduction of public rental housing as an opportunity to provide well-located high quality affordable housing for low-income households would fill a crucial gap in the housing continuum. Well-located, adequate, well-planned and managed public rental housing is an important collective asset and housing instrument that can be used by successive generations for sustainable human settlement advancement.

- Capacity should be developed in local and provincial government to implement and manage a programme for public rental housing.

- Government should provide the necessary regulatory frameworks and encourage small-scale formal and informal landlords to provide adequate housing.
Endnotes

1. Department of Housing 2005:8
2. Department of Housing 2005
3. Department of Housing 2005:7
4. Department of Housing 2005:8
5. Department of Housing 2005:9
6. Gauteng Department of Housing 2005
7. Statistics South Africa 2001
8. Department of Local Government and Housing 2007b
9. Department of Housing 2005
10. Department of Housing 2005:15
11. Department of Local Government and Housing 2006
14. Department of Housing 2005
15. Housing Finance Resource Programme 2002
17. Smith, K 2005:7
18. Crofton, O 2006
20. Gardner, D 2003
21. Crofton, O 2006
22. From Rust, K 2006, unpublished Viruly Consulting report which is presently not publicly available
23. From Demographic Information Bureau in National Department of Housing 2007
24. According to the Housing Finance Resource Programme 2002, 31% of South African households are renting, while the 1999 South African Urban Households statistics reports a 35.5% rental figure.
25. Housing Finance Resource Programme 2002
28. Rust, K 2006
29. Shisaka 2006 in Rust, K 2006
30. In Rust, K 2006
31. ibid.
32. ibid.
33. ibid.
34. In Rust, K 2006 adapted from Gardner, D 2004
35. Housing Finance Resource Programme 2002
36. Department of Local Government and Housing 2007a
37. Department of Local Government and Housing 2006
9. A RANGE OF HOUSING TYPOLOGIES

Contrary to popular belief, ‘housing’ does not only refer to a house as a physical structure, but encompasses all the different elements that constitute a human settlement. Urban environments that display high quality private space, communal space and access to facilities, contribute positively to the living conditions of residents. The physical, social, psychological and cultural environments contribute to the creation of a ‘sense of place’. A high quality urban environment brings about a positive sense of place, which in turn contributes to high levels of resident satisfaction, ownership and identity. Building and site design, in particular, contribute significantly to the ‘sense of place’ and quality of a housing development. More specifically, building costs, service provision and service costs, the nature of the unit, the configuration of the open space system and residents’ perception of and satisfaction with their housing environment, are all determined by housing typology.

According to Kevin Lynch, the basic texture of a city is determined by the predominant type and mix of its residential buildings. He summarises the models in a matrix pitting building height against ground coverage:

<table>
<thead>
<tr>
<th>Ground coverage</th>
<th>Building height</th>
</tr>
</thead>
<tbody>
<tr>
<td>High (over 6 storeys)</td>
<td>Moderate (3-6 storeys)</td>
</tr>
<tr>
<td>High (over 50%)</td>
<td>Dense walk-ups</td>
</tr>
<tr>
<td>Moderate (10-50%)</td>
<td>High slabs</td>
</tr>
<tr>
<td>Low (under 10%)</td>
<td>Towers in the green</td>
</tr>
</tbody>
</table>

Housing typologies discussed in this book include row-housing and semi-detached housing, three- to four-storey walk-ups, courtyard housing, flats, single room accommodation and cluster housing. These typologies are also illustrated in the eleven case studies.

A combination of typologies used in the same development for different income groups and household configurations enable residential environments to offer choice and diversity. The promotion of mixed use, which includes social facilities and trading space for small or micro-enterprises, as is the case in Sakhasonke Village, can help create vibrant housing environments and support residents’ livelihood activities, and enhance their general well-being.

When making decisions about the choice and appropriateness of different housing typologies, consideration must be given to the availability and cost of land, the socio-economic profile of end-users, the urban context and natural systems. Architectural, urban design and planning solutions that are not based on adequate knowledge about the end-users’ expectations, needs and values may have unintended consequences that are contrary to the intentions of planners and designers. Family separation was an insidious by-product of apartheid spatial planning and design. It is therefore imperative that design facilitates family life as this is critical to socio-spatial transformation in South Africa. The importance of co-operation between experts in fields such as economics, the built environment, ecology, sociology and psychology become apparent in the attempt to provide sustainable housing.

Untermann and Small emphasise the importance of planners’ and designers’ understanding and knowledge of the house analysis and design components as part of the overall process. They organise this into four parts:
1. **Determinants of house quality and suitability** – natural characteristics of the site such as view, water, physiography, vegetation; and artificial factors including buildings, utilities, services and roads, as well as building materials and construction methods, directly influence the quality and suitability of the dwelling unit. In addition, an understanding of the socio-cultural background of users is important, but housing must satisfy the following human needs:

   a. **Territory** – to make the most of definition of space, ground orientation of units should be maximised through outdoor space for as many units as possible. Intrusions onto visual, auditory and olfactory senses are often difficult to control, but should be minimised through creative design;

   b. **Orientation** – design attention should be paid to both sun insolation (absorption of the sun’s thermal energy) and insulation (suppression of the sun’s thermal energy), as well as day-lighting to capture optimum daylight. Sensitive responses are required to make the most of air movement or prevailing wind conditions and views;

   c. **Privacy** – in medium-density housing, privacy is mainly created by floors and ceilings, sound-proof party walls, fences, shrubbery etc. Internal privacy is attained by constructing rooms with doors and windows that cannot be looked into, while external privacy is more difficult to create;

   d. **Identity** – the primary factor in housing and settlement form is socio-cultural, where households seek identity through selection of distinguishing factors such as house style. In this regard, a combination and range of housing typologies become important;

   e. **Convenience** – the degree of physical ease experienced in carrying out household activities needs consideration although it is quite subjective;

   f. **Accessibility** – the degree of accessibility must be carefully adjusted to the needs of the intended user group and certain areas should be inaccessible to children;

   g. **Safety** – the way dwelling units are sited and the size, configuration and access of open space can determine its level of safety. The unit must be able to withstand natural forces and be reasonably fire-proof.

2. **Identification of household type** – identification of household type (single, couple, etc), socio-cultural and economic background, physical condition of household members is important. Household type will affect household activity and space requirements.

3. **Identification of house type** – there are several basic types of medium-density housing. To respond appropriately to community, environmental, economic and institutional needs, designers and planners should be familiar with both the opportunities and constraints of each house type. Creative typology combinations and sitings of buildings have the potential to overcome many stigmas and shortcomings of higher-density living.

4. **Correlation of household/house type** – without a description of the individual household, a match with the house type cannot be made accurately. Scenarios of different user profiles/household types should be sketched to determine the response of the housing environment to the human needs of territory, privacy, etc. mentioned above.

The quality of life of the household is greatly affected by spatial arrangements such as unit type, unit plan, layout of sites/buildings and open spaces. Tension is created when these spatial arrangements enforce or imply ways of living contrary to households’ expectations, role behaviour and values. In their landmark publication *Housing as if People Mattered*, Clare Cooper Marcus and Wendy Sarkissian⁶ state that the success of higher-density housing depends more on how the spaces between buildings are treated than on the interior design of units. De Jonge found a preference in housing environments for territories that are marked, that have clear boundaries and that make visual contact possible with the surrounding areas. The motives seem to be the need for some degree of protection, combined with a desire to receive visual information about the surrounding environment. The way a territory is organised and maintained may acquire symbolic value and become a form of self-expression. A number of fundamental processes are characteristic of the household’s interactions with the use of space.⁷
• care of children;
• socialisation of the individual;
• sexual life and intimacy;
• orientation in time, space and society;
• expression of status, ways of life and ideals; and
• creative activities and recreation.

Most of these require relative privacy, combined with some measure of contact with the outside world. There should thus be privacy, but also channels of communication with other persons and groups, different types of facilities and other urban opportunities. However, the ability to regulate communication with the outside world is critical to the functioning of the household: “The dwelling should function as a filter with regard to influences from outside with relative isolation in the home being regarded as a necessary condition for participation in community life”.8

In the behaviours and spatial arrangements for privacy, two levels can be distinguished: isolation of the family and its members from the outside world and mutual isolation for subgroups and individuals within the family. Both have implications for the layout of the unit. Within the house, space is structured in areas ranging from public (living room) to private (bedrooms). Between these areas, certain social and physical barriers are usually created requiring that certain conditions be fulfilled before crossing a barrier, such as knocking on the door before entering. Some plans, e.g., where the entrance to the bathroom is through the bedroom (Newtown Housing Co-operative), run counter to the desire to maintain privacy and to separate incompatible activities, which result in tension and dissatisfaction.9

Housing requirements, to a certain extent, are determined by a household’s structure. The number, age, gender and mutual relations of the members of the family influence the need for space units (number of rooms in the dwelling). The presence or absence of children also influences the preference for house type, as flats may be a more appealing choice for households with no or few children than for those with several children or senior family members. The demand for a freestanding house with yard space is felt more intensively when children are younger and more numerous. With increasing family size, the need for housing space increases but not proportionately, so that the average number of rooms per person decreases with increasing household size.9

I. Overview of housing typologies

The following overview of higher-density housing typologies should be read in conjunction with the section on design. The discussion excludes high-density multi-storey blocks, as well as detached single dwellings. It is by no means a comprehensive study of house types or a prescription of how to correctly design higher-density housing. It does, however, provide some broad considerations that need to be taken into account when contemplating, conceptualising and developing higher-density housing.

Each housing typology has special requirements for site planning and a large body of literature exists on urban environment design. Eminent architectural and urban design studies that could be consulted include:
• Clare Cooper Marcus and Wendy Sarkissian Housing as if People Mattered (1988);
• Charles Correa The New Landscape (1989);
• Jane Jacobs The Death and Life of Great American Cities (1993);
• David Lynch’s books Good City Form (1984), The Image of the City (1960) and Site Planning (1984);
• Oscar Newman Defensible Space (1972); and
• Untermann and Small’s Site Planning for Cluster Housing. (1977).

Unless otherwise indicated, the information in the tables below is broadly based on research by Poulsen and Silverman10 and informed by the case studies in this resource book.
There are four main categories of housing form:

1. **Detached** or freestanding housing (a low-density typology not investigated in this research).
2. **Attached** housing where each unit is joined side by side or one above the other, with a separate outdoor entrance and often a private outdoor space.
3. **Apartments/flats** where several dwelling units share a common (usually indoor) access and area enclosed by a common structural envelope.
4. **Hybrid housing** where two or more forms are mixed.

1.1 **Attached housing**

1.1.1 **Row housing (terrace housing)** and semi-detached housing

These typologies refer to attached units and individual land ownership. Semi-detached units consist of two units (layouts are often mirror images) built next to each other and sharing a party wall on one side only. Open space consists of front and rear areas, as well as one side of each unit. Row housing constitutes of a (usually uniform) continuous row of housing where internal side walls are shared and is the most accepted medium density attached housing form. It can be terraced up or down a hill to enhance the view or to provide good orientation, allowing terraces on the roof of the unit below. Terrace housing can achieve the highest densities. Town houses are similar to row houses, but parking is provided within the unit, whereas row and semi-detached units usually accommodate on-site parking. Row houses are located either parallel or perpendicular to the street and the number of possible arrangements is large.
Untermann and Small\textsuperscript{14} state that four units in a row is the minimum in terms of cost efficiency, while more than ten units is too long. During the 19\textsuperscript{th} century high-density housing in and around most of South Africa’s settlements was provided in the form of largely semi-detached, row and double-storey units, often with commercial and retail uses on the ground floor and street level, creating a vibrant and pedestrian-friendly urban environment.\textsuperscript{15}

An important cultural consideration in the South African context is extended families.\textsuperscript{17} Accordingly, it is common for residents of semi-detached units who have backyard renters (often family members) to complain that the only access to the backyard is through the house. Housing subsidy policy should take into consideration the existence of extended families rather than encourage the splitting of extended families into smaller units. However, cultural appropriateness is not static and relates to the underlying processes in the design and production of housing.\textsuperscript{18}

Table 23: Row housing (terrace housing) / semi-detached housing

<table>
<thead>
<tr>
<th>Some general considerations</th>
<th>Some advantages</th>
<th>Some disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Units configured as simplexes or duplexes, adjacent to each other or stacked to heights of 2 to 4 storeys</td>
<td>• Efficient use of land through high density low-rise construction</td>
<td>• Limited use of plot area for extension or planting</td>
</tr>
<tr>
<td>• Suitable for smaller scale infill projects and general densification by sub-dividing existing properties or adding units to existing property</td>
<td>• A range of densities can be achieved depending on the urban context</td>
<td>• Access to backyard of row house only possible through the main unit – problematic where backyard dwelling is rented out on the plot</td>
</tr>
<tr>
<td>• Design and layout to create adequate private ground floor yard space for individual units</td>
<td>• Shorter service runs than those for free-standing houses</td>
<td>• Lower levels of privacy and higher sensitivities to noise from neighbours caused by shared walls</td>
</tr>
</tbody>
</table>

An example of terrace housing\textsuperscript{14}
1.1.2 Maisonettes

Maisonettes are small blocks of flats with four, six or eight units per block and are a standard type of higher-density low-rise typology able to achieve a maximum vertical stacking of units. Upper units are reached by a common outdoor gallery at the second- or third-floor level. However, these corridors can pose security problems. Maisonettes provide excellent opportunities for introducing small numbers of higher-density housing developments into existing low-density suburbs where small pockets of land are available. This type of housing could provide a new way of developing well-located housing for domestic workers and their families, using employer contributions to augment funding.

Table 24: Maisonettes

<table>
<thead>
<tr>
<th>Some general considerations</th>
<th>Some advantages</th>
<th>Some disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units configured as simplexes, duplexes, adjacent to or stacked above each other to height of 2 to 3 storeys</td>
<td>Efficient use of land through high density low-rise construction</td>
<td>Loss of ground orientation for upper units</td>
</tr>
<tr>
<td>Suitable for new build social housing and public rental housing projects and smaller scale infill projects</td>
<td>Direct access of ground floor units to the street and/or communal area</td>
<td>Safety and protection from the weather compromised by external access to upper units</td>
</tr>
<tr>
<td>Design and layout to contribute to positive communal and shared spaces</td>
<td>Sense of responsibility and custodianship of communal areas created by limited number of residents</td>
<td>Lower levels of privacy and higher sensitivities to noise from neighbours caused by shared walls</td>
</tr>
<tr>
<td>Common facilities include gardens, play areas, parking, roads, drying yards, laundry</td>
<td>Public interior spaces such as landings and staircases shared amongst few households</td>
<td></td>
</tr>
</tbody>
</table>

1.1.3 Courtyard housing

Courtyard housing is one of the oldest housing forms, dating back at least 2000 years. Courtyard housing consists of attached units arranged around open spaces, forming courtyards. The semi-public courtyard space provides a sense of safety and privacy. Front doors typically open onto the courtyard and rear doors may open onto alleys. It can also consist of a number of units grouped around a courtyard or individual rooms with shared facilities around a courtyard. This form of housing, considered to have “a future as well as a past,” is receiving renewed attention as a higher-density housing typology. Morris Newman suggests that courtyard housing, as “an attractive alternative to the standard developer formula” for higher-density multi-family housing, presents opportunities to “bring density to existing pleasant neighbourhoods.”
Table 25: Courtyard housing

<table>
<thead>
<tr>
<th>Some general considerations</th>
<th>Some advantages</th>
<th>Some disadvantages</th>
</tr>
</thead>
</table>
| • Units configured as simplexes, duplexes, adjacent to each other or stacked to heights between 1 and 4 storeys  
    • Suitable for new build social, public rental, communal and transitional housing  
    • Effective design of buildings and layout contribute to potentially high levels of privacy and significant outdoor space as an extension of the indoor space\(^{24}\) | • Efficient use of land through high density low-rise construction  
    • Suitable for the adaptation of hostels  
    • Effective in densification of individual plots in low density areas  
    • Provision of safe outdoor courtyard areas, especially for children  
    • Courtyard shared by defined group of residents creates ownership and responsibility of communal space  
    • If planted and greened, courtyards form micro-climates able to moderate climatic extremes and provide manageable green space with limited water resources\(^{27}\)  
    • Cross-ventilation and sunlight maximised for all units through strategic placing of windows vis-à-vis courtyards\(^{28}\)  
    • Relatively inexpensive and applicable to warm, dry, sunny climate\(^{29}\)  
    • Cost reduction techniques of mass housing applicable | • Generally restricted to not more than 2 storeys due to sunlight requirement to penetrate courtyards  
    • Lower levels of privacy and higher sensitivities to noise from neighbours caused by shared walls and communal spaces |
1.2 Apartments/Flats

1.2.1 Three- to four-storey walk-up buildings

Three- to four-storey walk-up buildings are often used to configure the medium to higher-density low-rise scale of urban housing. The four storey limit was established by a number of determinants, of which stairs is the most decisive. Units are usually accessed via staircases with more than one unit sharing a landing. This typology is considered the least expensive form of medium-density housing. Climbing three flights of stairs is considered the maximum for healthy adults and excessive for children and the elderly. Behavioural studies have also found that residents become disengaged from the land when buildings exceed three to four storeys and this causes problems such as anonymity, indifference, fear for safety, loneliness, lack of community interest and insensitivity toward natural processes in general. Other determinants to the four-storey limit include construction according to conventional building systems while meeting structural and fire safety requirements, as well as unit cost comparing favourably with low- and high-density housing. According to Lynch, this type of housing is “a good basic model for apartment living” and can economically use central city land, while providing many of the characteristics of scale and access acceptable to residents.

Table 26: Three- to four-storey walk-ups

<table>
<thead>
<tr>
<th>Some general considerations</th>
<th>Some advantages</th>
<th>Some disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Units configured as simplexes, duplexes, adjacent to or stacked above each other</td>
<td>• Efficient use of land through high-density low-rise construction</td>
<td>• Loss of ground orientation for upper units</td>
</tr>
<tr>
<td>• Suitable for new build higher density housing projects and smaller scale infill projects</td>
<td>• Direct access from ground floor units to the street and/or communal area</td>
<td>• Sharing of public interior spaces such as landings and staircases amongst residents or neighbours</td>
</tr>
<tr>
<td>• Design and layout to create a sense of identity and ownership of communal areas</td>
<td>• Can be broken down in scale – few units share common stairway and common courtyard</td>
<td>• Risk of outdoor ground space being consumed by motor vehicles as densities are maximised</td>
</tr>
<tr>
<td>• Common facilities include gardens, play areas, parking, roads, drying yards, laundry</td>
<td>• Suitable for the adaptation of hostels</td>
<td>• Lack of sufficient community ownership and proper management and maintenance could lead to communal areas becoming neglected and dangerous</td>
</tr>
<tr>
<td></td>
<td>• Establishment of sufficient density for economies of scale to support local shops, services and viable public transport systems</td>
<td>• Complicated design and construction techniques result in higher construction costs</td>
</tr>
<tr>
<td></td>
<td>• Cost reduction techniques of mass housing applicable</td>
<td>• Lower levels of privacy and higher sensitivities to noise from neighbours caused by shared walls and communal spaces</td>
</tr>
</tbody>
</table>

Walk-up buildings were a popular typology for public rental housing in South Africa. These ‘council owned housing estates’ established during the apartheid years to accommodate people displaced during the forced removals of the 1960s and 1970s afforded little or no attention to urban design, landscaping or operational considerations of these environments, rendering them unsafe and user unfriendly. Issues such as shared washing lines and no clear delineation of space generated conflict between neighbours and the physical environment contributed to a variety of socio-economic problems, resulting in strong negative perceptions about walk-ups amongst the general public in South Africa.

Manenberg, Cape Town: Apartheid-era council owned housing estates
An award-winning urban regeneration design concept to address the physical environment problems that contribute to poor socio-economic conditions in such public rental estates, was produced by Inhabit Architecture and Design Consultants, using rental stock in Lavender Hill on the Cape Flats. The design addressed a range of issues relating to the location which are endemic to three- and four-storey public rental housing across the country; this includes the following:

- courts are randomly placed with large expanses of undefined, poor-quality public open spaces in between, resulting in a lack of cohesive urban structure. These open spaces are out of scale, do not relate to the housing units and therefore lack ownership, which results in undesirable spaces conducive to crime. The lack of ownership reduces opportunities for individual self-expression – a principle that would promote variety, even in identical buildings;
- separation of private, public, pedestrian and vehicular use functions restrains opportunities for an incremental process to occur in the built environment;
- courts allow pedestrian through-traffic resulting in tenants having no threshold space between their private units and the public domain. Natural surveillance and a sense of security are thus compromised;
- sense of place and identity are compromised due to repetition, uniformity and monotony of the built fabric and the poor quality open space;
- roads do not relate to buildings, are located behind buildings and are intended for vehicular use only; this results in unsafe back alleys with little surveillance;
- overcrowding in public rental units and the high demand to rent backyard dwellings from ground floor tenants indicate an urgent need for additional housing provision;
- the court layout allows little opportunity for individual economic opportunities and initiatives, while the overall environment attracts little economic growth and investment from external sources; and
- there is a lack of recreational, social and cultural facilities and the existing municipal and commercial facilities do not relate to the housing units or the community.

Inhabit identified opportunities for an overall spatial intervention that would address the inadequacies of the current physical environment and restore a sense of dignity to such communities. They suggest that:

- to achieve a series of private, semi-private, semi-public and public spaces, infill housing should enclose the courts and create safe semi-public courtyards. Minor alterations to existing courts will allow existing backyards to become front entrances, allowing a semi-private interface between the private housing unit and the public street. Spaces between this threshold and the street can be used for communal parking or playing area;
all streets become pedestrianised, while other public spaces are differentiated with levels using either hard or soft treatment. A ring road is used to accommodate faster traffic;

identity will be achieved where the open spaces become quality public spaces with distinct character. New infill housing will break the monotonous character of existing courts, together with minor changes to existing courts, such as balconies; and

the relationship between road and housing units (especially on the ground floor) would better accommodate home enterprises. Commercial nodes and corridors will therefore attract outside investment.

1.2.2 Flats

High-density flats consist of high-rise buildings exceeding three storeys, using either the hydraulic elevator that has an upward limit of six storeys, or the electric elevator that accommodates up to 30 storeys. All units share common interior areas such as corridors, stairs and elevators. The outside grounds are dissociated from individual units and are shared by all residents.

Table 27: Flats

<table>
<thead>
<tr>
<th>Some general considerations</th>
<th>Some advantages</th>
<th>Some disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units configured as high rise buildings exceeding 3 storeys</td>
<td>Efficient use of land through high density high-rise construction</td>
<td>Loss of ground orientation for upper units</td>
</tr>
<tr>
<td>Suitable for new build social housing and public rental housing projects, and general densification, especially in inner-city areas</td>
<td>Direct access of ground floor units to the street and/or communal area</td>
<td>Provision of private rental accommodation on a commercial profit driven basis</td>
</tr>
<tr>
<td>Design and layout to contribute to positive communal space instilling a sense of ownership, safety, readability and identity</td>
<td>Could potentially be refurbished and revitalised</td>
<td>Sharing of public interior spaces such as landings and staircases amongst residents or neighbours</td>
</tr>
<tr>
<td>Common facilities include gardens, play areas, parking, roads, drying yards, laundry</td>
<td>Establishment of sufficient density for economies of scale to support local shops, services and viable public transport systems</td>
<td>Risk of outdoor ground space being consumed by motor vehicles as densities are maximised</td>
</tr>
<tr>
<td>Usually well-located</td>
<td></td>
<td>Lack of sufficient community ownership and proper management and maintenance could lead to communal areas becoming neglected and dangerous</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Complicated design and construction techniques result in higher construction costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Public rental flats built as part of council housing schemes are mostly in low income areas removed from urban opportunities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lower levels of privacy and higher sensitivities to noise from neighbours caused by shared walls and communal spaces</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fear of users that personal identity may be lost in high-rise buildings</td>
</tr>
</tbody>
</table>
1.3 Hybrid/Cluster housing

This refers to a group of units arranged around a communal space, taking a variety of configurations. According to Untermann, cluster housing is “the most fundamental and enduring form of human settlement” and “by its very nature, cluster housing suggests a greater sense of community than suburban-type single family housing, as demonstrated when the two are contrasted: cluster versus linear, compact versus sprawl, public versus private, pedestrian versus auto, community versus individual”.

He gives the following basic types of cluster housing: row and terrace houses, town houses, flats, maisonettes and courtyard houses. Row houses and walk-ups can easily be combined on the same site as they are of similar scale and appeal to different groups, thereby broadening the occupant mix. Cluster housing can also be achieved through densification in low-density, single dwelling areas by adding granny flats, student apartments or formal backyard dwellings.

The use of cluster housing in creating sub-clusters to define cluster form and cluster open space.

Different dwelling types are combined to create an intimate scale, surveillance, variety and individuality.

Two conceptual cluster arrangements are demonstrated - around an entrance court and around a garden/green open space.
### Table 28: Cluster housing

<table>
<thead>
<tr>
<th>Some general considerations</th>
<th>Some advantages</th>
<th>Some disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A range of house types configured in a variety of ways</td>
<td>• Efficient use of land through high-density low-rise construction</td>
<td>• Quality of management and environment is dependent on body corporate</td>
</tr>
<tr>
<td>• Suitable for new build social housing and public rental housing projects, as well as general densification</td>
<td>• Combination of different typologies create a mix of units and affordability levels within the same development</td>
<td>• Lack of sufficient community ownership and proper management and maintenance could lead to communal areas becoming neglected and dangerous</td>
</tr>
<tr>
<td>• Layout forms a defensible enclosure that provides a reasonable degree of privacy, private outdoor space and ground orientation at higher densities</td>
<td>• Suitable for the adaptation of hostels</td>
<td>• Lower levels of privacy and higher sensitivities to noise from neighbours caused by shared walls and communal spaces</td>
</tr>
<tr>
<td>• Common facilities could include gardens, play areas, parking, roads, drying yards, laundry</td>
<td>• Provision of safe outdoor areas, especially for children</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Achievement of social benefits by aggregating shared open space and organising a hierarchy of private, semi-private and public spaces</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cost reduction techniques of mass housing can be applied</td>
<td></td>
</tr>
</tbody>
</table>

### 1.4 Other

#### 1.4.1 Rooms

Various rooms are available for rental. Government and some private companies provide dormitory-type accommodation in the form of hostels, while private formal boarding houses, rooms for rent in private homes and backyard shacks for rental are available. NGOs provide communal and transitional housing. It is estimated that as much as a third of the population live in single-room accommodation and there is a high demand for this form of accommodation.

### Table 29: Rooms

<table>
<thead>
<tr>
<th>Some general considerations</th>
<th>Some advantages</th>
<th>Some disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutional - transitional housing/ communal housing/ hostels:</strong></td>
<td>• Provision of generally affordable housing to migrants and people requiring minimal accommodation in urban areas, earning below R1500/month</td>
<td>• Negative image and associated with overcrowding</td>
</tr>
<tr>
<td>• Configured as individual rooms with shared facilities</td>
<td></td>
<td>• Some hostel developments not humanly scaled and unmanageable</td>
</tr>
<tr>
<td>• Design to create a sense of identity and manageable number of units</td>
<td></td>
<td>• Shared walls cause lower levels of privacy and higher sensitivities to noise from neighbours</td>
</tr>
<tr>
<td><strong>Privately developed rooms:</strong></td>
<td>• Filling gap in housing market currently not addressed by housing initiatives</td>
<td>• Often rented illegally</td>
</tr>
<tr>
<td>• Provided by private sector in absence of government mechanism</td>
<td>• Provision of affordable rental accommodation (as little as R100/month) for urban poor with access to basic services</td>
<td>• Infrastructure per plot often inadequate due to high densities</td>
</tr>
<tr>
<td>• Utilisation of converted office blocks and warehouses</td>
<td>• Accommodation of extended families and good social networks</td>
<td>• Often inadequate light and ventilation and use of unsafe building materials</td>
</tr>
<tr>
<td>• Granny flats and backyard rooms referred to as 'backyard, household or informal rental'</td>
<td>• Possibility of incremental development</td>
<td>• Tenants at risk of exploitation by landlords</td>
</tr>
<tr>
<td></td>
<td>• More effective use of infrastructure due to increased densities</td>
<td>• Minimum standards and town planning and building regulations not always taken into account</td>
</tr>
<tr>
<td></td>
<td>• Generally well-located</td>
<td>• Shared walls cause lower levels of privacy and higher sensitivities to noise from neighbours</td>
</tr>
<tr>
<td></td>
<td>• Provision of income in the form of rent to home-owner</td>
<td></td>
</tr>
</tbody>
</table>
Particular housing typologies produce particular densities. Each house type has an appropriate density within a sizeable range of densities. Lynch and Hack\textsuperscript{51} assert that three factors are used to determine the density associated with a particular house type:

- parking (how to store the automobile – and how many to store);
- the amount of private and communal open space; and
- the privacy distances between facing windows.

As a general guide, they provide some typical densities for the different unit types. They state that any house type can be built at lower densities than shown below, but economically as well as in terms of maintaining community facility thresholds, it may be difficult to justify figures that are much lower.

**Table 30: Lynch and Hack: proposed thresholds for different housing typologies\textsuperscript{52}**

<table>
<thead>
<tr>
<th>Housing typology</th>
<th>Floor Area Ratio (F.A.R.)</th>
<th>Net density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single family</td>
<td>Up to 0.2</td>
<td>Up to 20</td>
</tr>
<tr>
<td>Row houses</td>
<td>0.5</td>
<td>40-60</td>
</tr>
<tr>
<td>Stacked townhouses</td>
<td>0.8</td>
<td>60-100</td>
</tr>
<tr>
<td>Three storey walk-ups</td>
<td>1.0</td>
<td>100-115</td>
</tr>
<tr>
<td>Six storey elevator apartments</td>
<td>1.4</td>
<td>160-190</td>
</tr>
<tr>
<td>Thirteen storey elevator apartments</td>
<td>1.8</td>
<td>215-240</td>
</tr>
</tbody>
</table>

Similarly, Maluleke Luthuli and Associates\textsuperscript{53} propose the following net densities for South African cities:

**Table 31: Thresholds proposed for different housing typologies in South Africa**

<table>
<thead>
<tr>
<th>Housing typology</th>
<th>Net density</th>
<th>Plot size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>10-20 du/ha</td>
<td>400-800m(^2)</td>
</tr>
<tr>
<td>Semi-detached</td>
<td>20-30 du/ha</td>
<td>300-500m(^2)</td>
</tr>
<tr>
<td>Row housing</td>
<td>30-60 du/ha</td>
<td>150-300m(^2)</td>
</tr>
<tr>
<td>Walk-ups</td>
<td>60-80 du/ha</td>
<td>n/a</td>
</tr>
<tr>
<td>Flats</td>
<td>80-100 du/ha</td>
<td>n/a</td>
</tr>
</tbody>
</table>

According to Senior, the following housing typologies are recommended for densities of 150–450 persons per hectare (approximately 40–100 dwelling units per hectare):

- courtyard housing (single or double storey attached units);
- row housing;
- three to four-storey walk-ups; and
- flats of up to six storeys.
There is sufficient usable vacant land in most built-up urban and suburban areas in South Africa to provide for small groups of higher-density units. This would render unnecessary the relocation of significant numbers of informal settlement dwellers to peripheral, low-cost, low-density housing areas. Most of this land will not require major additional infrastructure and large savings on energy, transportation, agricultural land and service costs will be incurred. More importantly, social integration will result, as will affording poorer citizens improved access to urban opportunities.

Springfield Terrace, with a gross density of 257 du/ha, was built on only 8,083m² (less than a hectare), providing good quality inner-city housing to 133 sectional title owners. It is an outstanding example of infill housing on a relatively small piece of land. However, those who favour class or racial segregation may oppose such developments citing the loss of public open space, increased population and traffic volumes as objections. Social and economic motives, political will and a commitment from local government to give expression to their Integrated Development Planning goals will strengthen the acceptability of higher-density infill housing.
Guidelines

- Typology per se does not determine the quality of the environment, but a package of preconditions (such as scale, organisation, quality, arrangement of communal open spaces and institutional and community management), underlie safe and sustainable higher-density environments.

- There is no direct relationship between density and quality of housing. Consideration of and attention to a range of design and process factors relating to housing typology has the potential to enable vibrant and sustainable higher-density environments in well-located areas.

- The quality of life of the household is greatly affected by spatial arrangements such as unit type, unit plan, layout of sites/buildings and open spaces. Tension is created when these spatial arrangements enforce or imply ways of living contrary to households’ expectations, role behaviour and values. The success of higher-density housing depends more on how the spaces between buildings are treated than on the interior design of units. A preference exists in housing environments for territories that are marked, that have clear boundaries and that make visual contact possible with the surrounding areas.

- When making decisions about the choice and appropriateness of different housing typologies, consideration must be given to the availability and cost of land, the socio-economic profile of end-users, the urban context and natural systems. Architectural, urban design and planning solutions that are not based on adequate knowledge about the end-users’ expectations, needs and values may have unintended consequences that are contrary to the intentions of planners and designers.

- The creative use of different housing typologies opens up new possibilities of increasing densities in the form of infill housing in urban areas. A range of different housing typologies and the creative application thereof should be used to achieve different densities and types of housing environments that aim to meet the social, economic and environmental needs of as many households as possible.

- A combination of typologies used in the same development for different income groups and household configurations enable residential environments to offer choice and diversity, especially relating to sustaining local economic development. The promotion of mixed-use, which includes social facilities and trading space for small or micro-enterprises can help create vibrant housing environments and support residents’ livelihood activities, and enhance their general well-being.
Endnotes

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7. De Jonge, D 1967
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10. Poulsen, L. and M Silverman 2004
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25. Housing Generator 1997: 83
26. Takemoto, N 2006
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29. Lynch, K 1990
30. Lynch, K 1990
31. Untermann, R and R Small 1977
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33. Lynch, K and G Hack 1984
34. Lynch, K 1990
35. Lynch, K and G Hack 1984
36. Jacobs, T 2004
37. Jacobs, T 2004
38. Jacobs, T 2004
39. Jacobs, T 2004
40. Jacobs, T 2004
41. Jacobs, T 2004
42. Untermann, R and R Small 1977:1and 73
43. Lynch, K and G Hack 1984
44. Untermann, R and R Small 1977
45. Untermann, R and R Small 1977
46. Untermann, R and R Small 1977
47. Untermann, R and R Small 1977
48. Untermann, R and R Small 1977
49. Untermann, R and R Small 1977
50. Poulsen, L and M Silverman 2004
51. Lynch, K and G Hack 1984
52. Lynch, K and G Hack 1984
53. Maluleke, Luthuli and Associates 2007
The largest 17 cities in South Africa account for approximately 50% of total national energy consumption. Cities are an important focus area for achieving national energy targets for renewable energy and energy efficiency. They are also key players in national economic development and social welfare in support of the Millennium Development Goals. Energy is a key driver of development and poverty alleviation. 

From www.sustainable.org.za/cities Sustainable energy for cities website

The process of developing and managing human settlements and the built environment is vital to the achievement of general sustainability objectives, of which some include:

- cutting greenhouse gas emissions;
- reducing pollution;
- conserving resources;
- building cohesive and inclusive communities; and
- building a prosperous and secure economy.

The most cost-effective way to develop and maintain a high-quality housing stock in the long term is to incorporate principles of sustainability into all parts of the housing development process.

“The construction industry is responsible for around 40% of all resource consumption and 40% of all waste production (including greenhouse gas emissions) and it is therefore referred to as the “40 per cent” industry. It accounts for one sixth of total global freshwater consumption as well as, directly or indirectly, consuming 30-40% of total global energy. It generates huge wastes, accounting for between 30-40% of total waste generation. This becomes even more significant with the inclusion of demolition wastes. It is further responsible for 20-30% of all greenhouse gas emissions. The biggest contributors are the materials that form the basis of modern construction – cement production is, after the burning of fossil fuels, the biggest anthropogenic contributor to greenhouse gas emissions, while steel is one of the most energy-intensive materials. The manufacturing and final use of both these materials is also very water-intensive. Other environmental problems associated with this industry (through manufacturing of materials or actual construction processes) relate to loss of arable land, release of toxins into the biosphere, deforestation, and noise and dust pollution.”

CSIR-Boutek and CIB (2001): Agenda 21 for Sustainable Construction in Developing Countries: First discussion document. Reference No BOU/C336

The figure below contextualises sustainable construction as a component of sustainable development. Careful consideration should be given to all these components when developing higher-density housing.
- **Sustainable building** is about the process of creating buildings. Addressing energy and water conservation, re-using and recycling of components and materials, targeted job creation, use of local resources, as well as gender equality, are some sustainability objectives which could be identified. In contrast, biophysical unsustainability is characterised by severe environmental impacts at any point in the project cycle and cradle-to-grave cycle of materials and components, including inefficient land use.

- **Sustainable construction** includes using energy-saving methods and alternative forms of energy in developing infrastructure such as roads and bridges. Actions supporting sustainable construction are required, such as the generation and use of clean technologies and using local resources with minimal negative impacts on the natural environment.

- **Urban sustainability** is the broader process of creating human settlements and includes issues such as governance. Sustainable urbanisation implies the growth and harmonious development of the city within the natural environment, where habitat conditions provide optimum living conditions and equal opportunities for men and women. This includes more environmentally sound houses and infrastructure and development of new technologies that involve low financial cost and low environmental impact.

Housing in particular can make a significant contribution to sustainability because it:
- consumes large amounts of resources in its construction, maintenance and use;
- is a fixed asset with a long life; and
- is central to quality of life and has implications beyond housing, affecting transport, health, employment and community.

In South Africa there is however a general lack of knowledge of green building products, technologies, services and design for resource efficiency among most housing stakeholders, including government and non-government, profit-motivated and non-profit role players as well as tenants and owners. The South African Property Owners’ Association recently established a Green Building Council for South Africa to promote environmentally sustainable practices in the commercial and industrial property industry.

Napier and Mulenga remark that:

“… ideas such as design for energy efficiency, passive solar design, water efficiency measures, demand-side management, the use of renewable construction materials, sound solid waste management and good location, have usually been sacrificed in the drive to try and meet the large and ever growing need for housing in South Africa. In attempting to reduce the huge urban housing backlog, the mechanisms to fund housing favour the production of large quantities of houses rather than providing space to enable attention to detail or quality”.

The impacts of current settlement design norms — such as single houses on large plots with full-pressure water supply, water borne sewerage, grid electricity and inadequate insulation — militate against demand-side management or resource efficiency.

From a national overview of recent urban housing projects which incorporated innovative elements, Napier et al found no single model that paved the way to innovation. The water, sanitation, solid waste, energy and construction technologies which were the focus of the study manifested in a variety of ways, more easily describe as ‘pathways’ by Marvin. The study also found that innovation or a departure from the norm was not equivalent to appropriateness. A limited government subsidy produced a very standardised and non-innovative housing product in most cases, especially when delivered by developers. These houses are generally neither environmentally efficient nor appropriate. Innovations to improve resource efficiency are usually atypical in the majority of new housing developments. Attempts at innovation are laudable in that the current public sector context and prevailing attitudes on the part of developers and design professionals are not usually conducive to it.
The process that leads to good decisions on sustainable settlements seems to depend upon:9

- a sound set of criteria for decision making around sustainable development for all agents involved;
- supportive local authorities (although unsupportive local authorities can, in some cases, be circumvented);
- supportive utility companies that are prepared to support the interests of residents;
- professional design teams who are open to innovation and which apply new ideas in an appropriate manner, firmly grounded in the reality of sustainable livelihoods;
- an enabling policy environment in the form of appropriate legislation, regulations and by-laws;
- flexible and responsive modus operandi of the standards-making and regulating bodies;
- dynamic and creative leadership by the agency that leads or is powerful in the decision-making process; and
- a commitment to consumer education and ongoing awareness-creation by relevant stakeholders.

Understanding the energy and environmental implications of different layout plans, service options, house designs and implementation approaches is crucial in the quest for sustainable housing environments. The case studies discussed in the resource book generally did not demonstrate high levels of environmentally sustainable design and technologies, but in almost all the projects, some degree of consideration was given to environmental design elements.

### Moshoeshoe Eco Village

The Moshoeshoe Eco Village in the Galeshewe Township near Kimberley was developed as a pilot project by the Sol Plaatjie Municipality. A number of alternative or eco-technologies make the project one of a few low-cost housing projects countrywide that incorporated affordable environmental innovations into the 13 units of the medium-density housing scheme. Substantial savings on electricity bills resulted from the use of various alternative energy sources:10

- energy-efficient and cost-effective renewable energy through the installation of solar water heaters and photovoltaics with a back-up instantaneous gas water heater system;
- gas stoves in all units;
- energy-efficient light bulbs and appliances;
- electricity is only used for lighting and appliances such as refrigerators;
- an innovative urine-diversion toilet system to address water conservation and efficiency;
- a dual-type alternative dry-sanitation system which recycles black and grey wastewater through a filtration process; and
- sand-filtered grey wastewater is diverted to a collection pond and re-used for irrigation.

According to the project review by the Social Housing Focus Trust,12 a key lesson learnt is frank and open discussion of residents’ acceptance of certain environmental aspects of the project, particularly the sanitation systems. Communicating benefits to the community, especially financial savings, will help them accept alternative technologies. Furthermore, capital investment related to innovative environmental projects is usually very expensive, but has to be considered over the long term where significant savings will be realised. This pilot project will be monitored to generate findings on the cost of green developments versus the cost of conventional buildings, taking into account that additional funding or donor finance was required for solar panels.
Recognising the importance of sustainable building and construction as part of urban sustainability in terms of environmental impact, affordability, end-user satisfaction and settlement quality, recommendations in this section are rooted in ‘green’ design principles. People are at the centre of sustainable development and therefore sustainability will largely depend on each individual or community’s conscious choice to adopt or reject the principles on which it is based. It is clear that the culture of housing development needs to change its focus to sustainability. Ultimately, the construction sector will have to be completely reinvented, from the materials used and how they are manufactured, to how development and the methods used to achieve it are viewed. Developers (housing associations or for-profit companies), builders, architects, land-use planners, as well as the tenants and owners, should be involved. Sustainability objectives will be achieved only if they are taken into account from design through construction to long term use and eventual disposal and recycling.

The following sections provide an overview of considerations before, during and after concept development and implementation of higher-density housing projects. With attention to planning, urban design and architectural considerations, higher-density housing environments can become attractive and pleasant spaces. Porta and Renne emphasize the following factors contributing to the sustainability of communities:

- accessibility;
- land use diversity;
- public/private realm;
- natural surveillance;
- permeability/street connectivity;
- employment density;
- number of buildings; and
- number of plots.

A summary checklist is provided on pages 169 to 171.
1. The site and buildings

As discussed above, the effectiveness of layout and appropriateness of housing typology are important as they establish land use and infrastructure supply, relating to both higher-density dwellings on single plots (e.g. row housing) and multi-unit buildings (multi-storey walk-up buildings). However, the availability of existing (bulk) infrastructure such as water, sanitation and stormwater, electricity, telephone, roads and others, is decisive for site development from both economic and environmental points of view. Infrastructure costs and public utilities will depend on the optimisation of the layout solution and the percentage of land allocated for residential use, public space, semi-public spaces and the level and standard of services.

The layout must enhance an efficient and balanced trade-off between the private and public areas. If infrastructure is available directly to a site, the costs of development may be significantly minimised and this relates to the disadvantages of building on the urban periphery. Therefore, issues relating to the design of the site that should be considered from the inception include town planning, urban design, architecture and landscaping considerations. The case studies presented in this resource book provide examples of good practice regarding these other considerations.

According to Acioly and Davidson\(^1\) optimising the layout solution, the percentage of land allocated for different uses and the levels and standard of services, will influence the costs of infrastructure and public utilities. Where land for public use is extensive, there will be less for other purposes, putting a heavier burden on public and community sectors in terms of higher service costs with public utilities, longer distances to be covered by foot and infrastructure networks, maintenance costs, taxation and so on.

Hillier\(^2\) found that the design and layout of buildings and spaces can have more impact than the density itself. He showed that if, in high-density inner-city high-rise housing in London, the spatial layout of the settlement constrains natural movement, there will never be sufficient people to generate the sense that the space is well used, regardless of the density. Layouts must result in an efficient and balanced trade-off between the private and public domain, considering that sustainable housing development depends on the layout solution providing optimal land use and infrastructure distribution. This strongly relates to the concept of ‘defensible space’ and is illustrated in the public rental estates provided by the apartheid government.

1.1 The site

Smaller plot sizes imply higher residential densities, which, in turn, imply higher thresholds to support public transportation and other services, as well as economic opportunities, increasing accessibility and exposure and reducing costs. Plot size is very important, as the size, width, length or depth and shapes of plots, plot coverage regulations and the dimensions of roads will significantly affect eventual density and efficient use of land and infrastructure. These considerations pertain to the provision of higher-density typologies (such as row and semi-detached housing) on separate plots. Plot size is determined by the cultures of cities and varies from country to country, which makes it very difficult to compare densities. Plot sizes in South Africa are reducing and are influenced by cultural and social needs, affordability, land availability and economic service runs.\(^3\) When determining plot size and shape for higher-density housing on separate plots, affordability limits and land prices have to be considered, together with cultural practices and local values.\(^4\)

Typical plot sizes for low income housing varies between 100m² and 150m² but must provide for the space, ventilation and day-lighting needs of an average size household. A 100m² plot is large enough to provide for activities such as extensions to the dwelling unit, vegetable and flower gardens with trees, a washing line and an outside sitting area.\(^5\) In the past, the ideal size of a site in a low-income residential area would have been 200–240m², with a street frontage half the depth of the plot. The 1:2 proportions of the site proved to be inefficient to infrastructural services and movement systems. According to the European
Commission, a 1:3 proportion is recommended, allowing more connection points per water and sanitation line. In the case of Sakhasonke, average plot size was 73m² with an average (semi-detached) unit area of 46m² (coverage of 31%). This still allows residents to extend their units and have space for gardening.

It is essential that houses be located on plots in a way that allows for future extension, especially for low-income residents as they accumulate savings over time to extend their dwellings. Problems relating to small plot size can be surmounted by providing pleasant and well-planned public areas and humanly-scaled streets. Location of houses in terms of the street is important in creating an enclosed, defensible space. Placing houses close to the street edge creates a formal edge and a sense of place.

To reduce infrastructure costs, plot frontages should be kept to a minimum, but should not be less than six or seven metres. At very low densities, service runs are too long and at very high densities, services may become complex and pass through a cost threshold. Where possible, a range of plot sizes should be provided to allow for variations of income, household composition and tenure types. Acioy and Davidson recommend that narrow plots only be used in extreme situations because of climatic impacts and cultural acceptance. Narrow plots should be linked to row-housing development, high plot coverage in case of short depth and vertical developments. Land use conditions proposed as part of the Development Facilitation Regulations specified a permissible coverage of 60% for residential plots and 70% for commercial and community facilities. Attached and semi-detached houses make better use of plots, as there is no wasted space on the sides of the dwelling and the back yard is protected from the view of the street.
Caminos and Goethert\textsuperscript{27} and Turner\textsuperscript{28} recommend the following percentages result in optimal settlement layouts, based on various cases:

\textbf{Table 32: Optimal settlement layouts}

<table>
<thead>
<tr>
<th>Land use</th>
<th>Caminos &amp; Goethert</th>
<th>Turner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public land (roads, public open spaces)</td>
<td>20-25%</td>
<td>20%</td>
</tr>
<tr>
<td>Semi-public land (schools, specialised institutions)</td>
<td>15-18%</td>
<td>20%</td>
</tr>
<tr>
<td>Private land (plots for housing, commerce and other uses)</td>
<td>55-62%</td>
<td>60%</td>
</tr>
</tbody>
</table>

\section*{1.2 Housing units and buildings}

Adequate housing has to provide adequate space in terms of health and privacy for occupants. Overcrowding can lead to health, social and mental problems, particularly for children and women. In low-income areas, household sizes vary from one to more than ten people, but a median size is five persons. Research has shown that there is a link between overcrowding and respiratory infections such as bronchitis and tonsillitis in children aged one to three, due to the increased risk of pathogen transmission.\textsuperscript{30} There is also a strong link between overcrowding and psychological distress.\textsuperscript{31} Indisputably, extremely high densities result in poor health conditions, although it is complex to distinguish what is caused by density and what is caused by poverty.\textsuperscript{31}

An acceptable standard for low-income areas in developing countries is 4–6m\textsuperscript{2} of built dwelling per person. Thus, 20–30m\textsuperscript{2} could be considered an adequate minimum size for a core house.\textsuperscript{32} The Association of Mortgage Lenders specifies that foundations and slabs for incremental housing must have a minimum size of 40m\textsuperscript{2}, with a walled and roofed area with a minimum size of 20m\textsuperscript{2}. The Uniform Building Code of the International Association of Building Officials and the Mantag (Minimum Agrément Norms and Technical Advisory Guide) guidelines specify that at least one room in every dwelling must have a minimum area of 11m\textsuperscript{2}.\textsuperscript{33}

The United Nations, International Union of Family Organisations and International Federation for Housing and Town Planning recommends an ideal minimum size as a three-roomed, 38m\textsuperscript{2} house for a family of two, and a five-roomed, 62m\textsuperscript{2} house for a family of six.\textsuperscript{34} Low-income families cannot usually afford a house of this size and have to take an incremental approach to housing, starting with a core house.

Focus groups undertaken in informal settlements by BESG (the Built Environment Support Group) confirm that a two-roomed core house that can be extended is an acceptable form of housing. Flats need to be of an adequate size from the outset, ranging from 30m\textsuperscript{2} for one person to 85m\textsuperscript{2} for a household of six persons. Smaller sizes can be adequate for rooming-house accommodation where cooking and ablution facilities are shared.\textsuperscript{35}

The physical structure or envelope of a dwelling must comply with the following criteria:\textsuperscript{36}

\subsection*{1.2.1 Thermal acceptability}

Energy principles should be used in the design and layout of new housing developments. There is a link between detrimental living conditions such as poor solar orientation, location, unsatisfactory design of housing and poor human health. An adequate dwelling must thus provide a comfortable thermal environment. The high cost of artificial heating causes low-income households to rely on the thermal performance of their units to provide a healthy and comfortable indoor living environment.

‘Passive thermal design’ refers to design that takes account of factors such as the sun, wind, rain, topography and seasonal changes. Housing should respond to the local climate. Each climate zone in South Africa has different requirements for buildings and settlements to meet the needs of its inhabitants.\textsuperscript{37} Comfortable temperatures range from 16–32°C, with an optimum temperature of 21–22°C. The following factors should be taken into account:

- thick walls and insulation (ceilings) can improve the performance of a dwelling by preventing rapid heat loss and gain;
• an insulated ceiling can reduce maximum indoor temperature by up to 5°C in summer and in areas with cold winters, ceilings can reduce the heating required for thermal comfort by 50%;

• a wide roof overhang on the sun side cuts out high summer sun, but allows in low winter sun;

• buildings should be staggered so that they do not shade each other;

• to benefit optimally from passive thermal design, houses should be north-facing with most of the windows located on the north side of the building. A study determined that north-facing dwellings were comfortable 28% of the time in winter, which dropped to only 11% for those facing west. Ideally, a maximum variation of 15° from north-south, east-west is acceptable;

• rooms that are used as living rooms should be on the north side to receive natural light and warmth; and

• a compact unit plan will reduce the loss of heat as it exposes as little wall area as possible to the outside. Compact units are square rather than rectangular, attached rather than separate and double or multi-storey rather than single storey.

1.2.2 Adequate protection from damp
Rain penetration, rising damp and condensation cause moist indoor conditions, which contribute to respiratory diseases, rheumatism and arthritis and encourage house dust mites and the growth of moulds and fungi. Dampness can be prevented by ensuring sufficient roof overhang to protect walls from rain penetration. A damp-proof membrane beneath the floor slab and damp-proof coursing in the walls are necessary to prevent rising damp, while good ventilation promotes dry indoor conditions. All the projects researched in the Southern Cape Coastal Condensation area that were built with the government subsidy, namely Missionvale, Sakhasonke, Samora Machel and Stock Road, displayed high levels of damp and rain penetration. Cement blocks (single skin) are generally used in low-cost housing. The single-skin wall coupled with a lack of technical understanding and supervision does not sufficiently prevent damp penetration.

The National Housing Standards require the introduction of lime into the mortar mix (1 volume cement x 1 volume unhydrated lime x 6 volumes of sand) to decrease external water penetration, as lime expands and fills up cracks when in contact with water. This would not require any additional costs but does improve efficiency. A foolproof method to mitigate water penetration is the construction of a double-skin wall, or making use of alternative building methods including timber-frame housing, the Aruba 2000 Building System or the Ecobeam System. The latter resists water penetration as sand in the bags functions as a filter, allowing water to filter down to the dampcourse and exit the wall to the outside. These interventions would require an increase in the subsidy, but the long-term benefits of thermal stability, a healthy indoor environment and prevention of damage to the building due to dampness would far outweigh the short-term costs.

The Aruba Construction System has high thermal and acoustic insulation and is water resistant. It is a fast, environmentally friendly, cost-effective building system (with savings of up to 25% in overheads and labour). It suits local conditions, complies with all statutory requirements and facilitates the use of unskilled labour.
1.2.3 Adequate ventilation and lighting
Ventilation is necessary for physical and psychological health and for thermal reasons. Fixed ventilation in the form of air bricks or openings under the eaves, or openable windows, will provide sufficient fresh air and remove indoor pollutants. Openable window space of 5% (1:20) is an international standard for minimum ventilation requirements for habitable rooms and can also provide adequate lighting if the windows are suitably positioned. Window placement is more important than the size of openings. At least two windows in different walls of the habitable space of dwellings should be provided to allow for cross-ventilation. Windows are also crucial for providing light during the day. The lack of adequate daylight can impede activities such as reading and cooking. Most importantly, direct sunlight “has favourable psycho-physiological effects on both thermal comfort and biological activity of the body and also has bacterial effect. Daylight gives occupants a feeling of direct contact with the outside world, an important factor for mental social well-being.”

1.2.4 Noise
Noise from neighbouring units or communal areas is often a source of great frustration and a source of conflict between neighbours. In the case studies people generally complain that noise from their neighbours affects their quality of life. Culture, personality, experience and expectations impact on acceptable limits of sound. Recognising the subjective factors related to noise would help to determine when others are creating noise unfairly and how to respond.

Generally, residents and households living in higher-density housing should be mindful of the impact of the noise they create on their neighbours and their neighbourhood. Minimising noise transfer and informing neighbours when there is a particular need to generate noise, such as a party, contribute to a healthy living experience with reduced stress. Outdoor noise reduction factors to be considered in the design of higher-density housing include sufficient distance from the source (usually the street/traffic and active outdoor areas), soft landscaped and planted surfaces that will absorb sound, erection of barriers to reduce transmission of noise and avoiding the arrangement of buildings in long rows or around hard surfaced courtyards. Interior noise reduction techniques are generally more costly as they require thick, shared walls and sound-absorbent materials. Appropriate design for noise includes:

• the use of solid dividing fins between balconies;
• avoiding hard floor surfaces above ceilings without sound insulation;
• using solid core doors;
• keeping pedestrian and vehicle thoroughfares away from bedrooms and living rooms;
• avoiding placing windows and doors of neighbouring units opposite or adjacent to one another;
• paying attention to elements like floor and ceiling plates and installation of services such as plumbing; and
• using composite construction methods which combine light and heavy mass materials.
1.3 Open space

With increased densities and reduced availability of private space, the issue of semi-private, semi-public and community open spaces becomes particularly important. Adequate provision of open space is more often than not the decisive factor in the success or failure of higher-density developments. Spaces which accommodate individual and collective human activities are referred to as indoor and outdoor 'non-unit' spaces of different character, determined by the grouping of units in different types of building configurations, or as 'social outdoor rooms of urban settlements' and should be guided by factors that impact on their performance:

- **multi-functionality** – public spaces must as far as possible fulfil a variety of functions;
- **scale** – spaces must be humanly scaled and are affected by the height of abutting buildings;
- **clarity of role and definition** – space should be easily readable and a clear distinction should exist between private and public areas;
- **enclosure** – urban spaces must be clearly defined and have a sense of closure, giving special attention to defining the edges; and
- **comfort** – the quality of the space is influenced by the enjoyment it provides of and protection from, the natural elements.

Attractive, safe and adequately sized public open spaces are defined by buildings. Parking space should not be lumped in one place but spread across the site in small parcels.

Social scientists challenge the widely accepted myth that higher-density and affordable housing increases crime and assert that the design and use of public spaces has a far more significant effect on crime than density or income levels. There is no relationship between population or housing density and violent crime rates; when residents’ incomes are taken into account, the effect of density on non-violent crime decreases to non-significance. The design and use of public spaces and particularly the sense of ownership and control that residents have over these areas has a far more significant effect on crime than density or income levels. In neighbourhoods where there is a shortage of employment opportunities, social and community facilities, disinvestment and a general lack of urban opportunities, crime levels tend to be higher.

A household’s claim to territory diminishes proportionately as the number of households sharing it increases; the more people who share a territory, the less each individual experiences rights to it and the more difficult it is for residents to identify it as their own or to determine the activity taking place within it. In higher-density housing developments, communal open space is only used if there is a sense of ownership, enclosure and safety. Areas shared by multiple families are often more neglected than those shared by fewer families. Ideally, small open spaces for recreation or outdoor production should be allocated to and controlled by small groups of residents. It is easier for outsiders to enter areas shared by 50 units, than areas shared by 10, for instance. Anonymity can easily be maintained in larger areas as it is difficult to distinguish...
between residents, their guests and intruders, thus compromising safety. Therefore, the fewer units sharing an area (interior or exterior), the safer it is and the easier it is to reach an informal understanding with other residents as to what constitutes acceptable usage.\(^{53}\)

Newman states that what is true for site design is also true for building design. As with site design, different building designs with identical densities and coverage can contribute significantly to the quality of a housing development. The same building envelope can be designed in numerous ways to create different results, as illustrated in the figure opposite for a three-storey walk-up. The smaller number of units sharing an entry and landing in the lower configuration gives residents better control over public spaces, as intruders can be identified immediately and acceptable behaviour can be established among residents.\(^{56}\)

In the following example, the effects of three different building types on residents’ ability to exert control over the areas surrounding their housing units are examined.\(^{58}\) The table depicts the same four-block area, but using a different building typology, resulting in different densities. Note that densities used in the example are rather low.

**Table 33: Effects of different building types**

<table>
<thead>
<tr>
<th>Design component</th>
<th>Housing typology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Row house</td>
</tr>
<tr>
<td></td>
<td>Three storey walk-up</td>
</tr>
<tr>
<td></td>
<td>High-rise super block</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>7 du/ha (18 du/acre)</td>
</tr>
<tr>
<td></td>
<td>15 du/ha (36 du/acre)</td>
</tr>
<tr>
<td></td>
<td>20 du/ha (50 du/acre)</td>
</tr>
<tr>
<td><strong>Indoor areas</strong></td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>Public — lobby, stairs, elevators, corridors</td>
</tr>
<tr>
<td><strong>Front yards</strong></td>
<td>Semi-private</td>
</tr>
<tr>
<td></td>
<td>Semi-private</td>
</tr>
<tr>
<td></td>
<td>-</td>
</tr>
<tr>
<td><strong>Back yards</strong></td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>Back yards of ground floor units are private</td>
</tr>
<tr>
<td></td>
<td>-</td>
</tr>
<tr>
<td><strong>Ground surrounding units</strong></td>
<td>All grounds except streets and sidewalk are assigned to individual units</td>
</tr>
<tr>
<td></td>
<td>Semi-private — remainder of court accessible to all residents, but not to outsiders</td>
</tr>
<tr>
<td></td>
<td>• Public — accessible to all</td>
</tr>
<tr>
<td></td>
<td>• Residents do not feel responsible for grounds</td>
</tr>
<tr>
<td><strong>Lawns and parking</strong></td>
<td>Semi-private lawns abut sidewalk and car is parked on curb, making sidewalk a semi-public area</td>
</tr>
<tr>
<td></td>
<td>Semi-private</td>
</tr>
<tr>
<td></td>
<td>Public</td>
</tr>
<tr>
<td><strong>Entry to streets</strong></td>
<td>Private — one unit per entry</td>
</tr>
<tr>
<td></td>
<td>Semi-private — entry shared by six units</td>
</tr>
<tr>
<td></td>
<td>• Building entries do not face street</td>
</tr>
<tr>
<td></td>
<td>• Entry shared by 50 families</td>
</tr>
<tr>
<td><strong>Proximity of units to street</strong></td>
<td>• Maximum set-back of 6m from street</td>
</tr>
<tr>
<td></td>
<td>• Units situated close to street incorporates sidewalk into residents’ sphere of influence</td>
</tr>
<tr>
<td></td>
<td>• Maximum set-back of 6m from street</td>
</tr>
<tr>
<td></td>
<td>• Units situated close to street incorporates sidewalk into residents’ sphere of influence but not as manifestly due to six units sharing a lawn</td>
</tr>
<tr>
<td></td>
<td>• No association with street and sidewalks</td>
</tr>
<tr>
<td></td>
<td>• Distant from units</td>
</tr>
</tbody>
</table>
Semi-detached houses, row houses (town houses), cluster and courtyard housing have no public interior spaces that are not controlled by the households. The essential difference between these typologies is the density that can be attained. The figure below demonstrates the nature of spaces in and around them.\textsuperscript{59}

The nature and space in and around different housing typologies\textsuperscript{60}

Depicted in the figure below, the three- to four-storey walk-up building introduces circulation areas within the building that are shared by more than one family. The number of families sharing these areas depends on how entrances, stairs and corridors are distributed. The figure depicts two units per floor sharing a common landing. The grounds surrounding the building are considered public, but there must be a transition between private and public space.

The nature of shared and communal spaces relating to walk-up flats\textsuperscript{61}

The high-rise building illustrated consists of 195 units sharing interior areas. Thirteen households on each floor share the same semi-public or public spaces, which are accessible from two sets of stairs and two elevators. The outside grounds are entirely disassociated from the individual units and are shared by all 195 households.
Buildings and public spaces in lower-income higher-density areas are often not humanly scaled and are unsafe and unpleasant spaces that do not promote positive social interaction. These developments are generally in much worse condition than middle-income developments, because the latter have funds for security, maintenance and maintenance staff to maintain communal areas. Often these disagreeable spaces detract from the quality of housing and the general public environment.

It is important that maintenance and responsible use of communal open spaces are set out unambiguously from the outset. Community efforts and organisation demonstrated in the case studies are evidence of the positive role residents can play in the maintenance and upkeep of their housing. Participation increases residents’ sense of ownership of the housing environment, resulting in greater care, maintenance and vigilance. Layout and organisation of public space can make an environment more, or less, secure. Key techniques are surveillance and giving local residents a sense of territorial responsibility. The physical layout should allow residents to control the areas around their units such as streets, grounds outside their buildings, lobbies, corridors and stairways. Design of the units and of semi-private spaces such as the stairs, corridors and areas abutting the building need to be mindful of safety and security considerations, noise, disabled persons and moving of furniture. Appropriately designed housing and landscaping could be used to provide scale and definition to these spaces, while increasing surveillance through units overlooking a central courtyard and providing protection against the elements.

The illustration opposite compares the site design of a three-storey walk-up development (right) and a high-rise development (left), both at a density of 16
du/hectare and one parking space per unit. Because the walk-up building is positioned close to the street, entries, play areas and parking are brought within the sphere of influence of residents. Each entry serves only six families, as opposed to the high-rise buildings where 60 families share a common entry. The walk-up building creates a better quality environment, mainly due to site and building design, allowing residents a greater sense of ownership and control over their immediate environment. According to Newman, the walk-up development has a ground coverage of 37% versus the 24% of the high-rise, but “municipalities that wish to reap the benefits of walk-up versus high-rise buildings must learn to be flexible with their floor-area-ratio requirements to ensure that they are not depriving residents of a better housing option in order to get more open ground space that has little purpose”.

**Table 34: Site design comparison between high-rise and three storey walk-ups**

<table>
<thead>
<tr>
<th>Design component</th>
<th>Housing typology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Density</strong></td>
<td>High-rise (16 du/ha)</td>
</tr>
<tr>
<td></td>
<td>Three storey walk-up (16 du/ha)</td>
</tr>
<tr>
<td><strong>Ground coverage of buildings</strong></td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>37%</td>
</tr>
<tr>
<td><strong>Parking</strong></td>
<td>1 parking per unit</td>
</tr>
<tr>
<td></td>
<td>Parking bays designed as continuous strip along street, thus disassociating buildings from street</td>
</tr>
<tr>
<td></td>
<td>Buildings and entries juxtaposed with interior or city streets and parking</td>
</tr>
<tr>
<td><strong>Building entrance</strong></td>
<td>All entries facing interior grounds of development</td>
</tr>
<tr>
<td></td>
<td>60 families sharing entry</td>
</tr>
<tr>
<td><strong>Play and sitting areas</strong></td>
<td>Anonymous, public area</td>
</tr>
<tr>
<td></td>
<td>Provided near entry to each walk-up, thus extending sphere of influence into street</td>
</tr>
<tr>
<td><strong>Distance of unit from street</strong></td>
<td>Set back from street</td>
</tr>
<tr>
<td></td>
<td>Short distance from street</td>
</tr>
</tbody>
</table>

Hard open space, which consists of surfaced or compacted outdoor spaces and green space, consisting of trees, lawns and vegetation, can be private or communal space. A hard space system including roads, pedestrian pathways and public spaces is a very important part of an environment that meets the needs of its inhabitants. It must provide opportunities for community interaction and small-scale economic activities, areas for children to play, space for walking or exercise, as well as for sitting and relaxing. Attractive, well-lit pedestrian paths should be provided where possible and pedestrian traffic should always be prioritised over vehicular traffic. Traffic calming measures should be used where needed. Streets abutting high-density housing developments used by private motor vehicles must be humanly scaled and be part of the communal living space of the resident community. The use of speed humps can keep speeds to a minimum (usually 30-40km/hr).

Communal areas should be consciously and mindfully designed, leaving no ambiguous spaces between buildings and between buildings and site boundaries. Lynch and Hack found that when outdoor spaces shrink to 3.5x4.5m (±16m²) they are hardly used.

The case studies highlighted the need to subdivide and assign communal areas, separating different activities for different resident groups in the projects. Sizes, features and locations of open space areas for children are based on the organised games considered appropriate for different age groups. Children younger than five need simple, flexible spaces that are easily supervised, while older children require level, hard-surfaced areas for specialised activities. It is also important to distribute smaller play areas throughout the project, serving small clusters of units/households as opposed to concentrating them.
in one big area. Play space for younger children should be separated from that of teenagers and especially from motor vehicle circulation areas. Lynch and Hack recommend that the socialising of adolescents occur “at arm’s length from adults”, preferably in a setting consisting of a centre for teenagers, a place for small business enterprise or an active recreation area accommodating ball games. Sitting areas for adults (the elderly) should be provided overlooking play areas for children. Communal areas which cut across the age groups and encourage social contact include community gardens, washing line yards, areas for picnic or braais and other facilities. However, separation of use areas and definition of space can be done by planting, paving, curbing, landscaping, trellising, retaining walls and outdoor equipment. Well-functioning open spaces are enclosed by buildings, trees, or colonnades.

Trees and vegetation are often sparse or absent in high-density, low-income areas and more so in new housing developments. Initial caring for and watering of trees and vegetation is particularly difficult, but the greening of residential areas is extremely important: trees and plants improve the ‘sense of place’ of an area and provide enclosure along routes and around public spaces;

- vegetation provides shade and shelter from the elements and contributes to an improved micro-climate;
- vegetation captures dust and pollutants and can purify the air;
- vegetation can absorb water, improve drainage and reduce stormwater runoff;
- vegetation can reduce erosion by up to 50% and can be used to stabilise steep slopes;
- a fruit and vegetable garden of 25m² can provide about 40% of a family of five’s vegetable needs; and
- indigenous, deciduous trees can shade the north side of the unit in summer and allow for exposure to the sun in winter.

Management of these undertakings, especially a communal vegetable garden, is important. The case studies also highlight the importance of access to meeting places and offices for community groups and leaders, after school facilities, safe and sheltered washing line areas, refuse collection and braai areas.

1.4 Designing for safety

Because of funding issues, affordable higher-density housing developments do not usually have 24-hour security personnel. Coupled with low resident ownership, communal areas become the places where crime is most prevalent in public housing developments. The graph below demonstrates the relationship between the increase in crime and increased building height and shows that crime is mostly located within public areas.
According to Newman, the physical factors that correlate most strongly with crime rates are, in order of importance:

1. Height of buildings (which correlates with the number of apartments sharing the entry to a building).
2. Size of the housing project (number of dwelling units).
3. Number of other publicly assisted housing projects in the area.

This supports the importance of incorporating affordable housing in well located and mixed-use areas, preferably aiming to achieve mixed-income residents. The physical form of the residential environment is shown to play an important role in reducing crime and in helping residents to control behaviour in their housing environments. Complex and anonymous housing environments make it difficult for a code of behaviour to be established among residents.

Research conducted by the CSIR into the relationship between crime and spatial planning, urban and architectural design and the use and management of the physical environment suggests that if the environment is planned, designed and managed appropriately, certain types of crimes can be reduced. Crime Prevention through Environmental Design (CPTED) “aims to reduce the causes of and opportunities for, criminal events and address the fear of crime by applying sound planning, design and management principles to the built environment.”

However, numerous factors influence the type of crime that occurs, as well as where and when it occurs and therefore it is necessary that planning and design principles work together with other crime prevention approaches. Based on international studies and guided by the local context, the CSIR identified five principles that are critical to establishing how the physical environment either reduces or increases the opportunities for crime, and which support the creation of well performing living environments in general. They are:

- surveillance and visibility;
- territoriality;
- access and escape routes;
- image and aesthetics; and
- target hardening.
1. **Surveillance and visibility** — Passive surveillance is the casual observance of public and private areas by users or residents during the course of their normal activities. Active surveillance refers to surveillance by police or other agents whose particular function is to ‘police’ an area. Passive surveillance is often referred to as the presence of ‘protective eyes’ or ‘eyes on the street’. The extent of visual contact that people have with a space, together with the degree of their being visible to others, determines the extent to which they can intervene and whether the users feel safe. This depends on a range of factors that include windows, doors and other openings, the distances between buildings, the sizes of the public spaces, vacancy rates as well as the extent, degree and type of use to which the space is put. The zoning of land and how buildings are used become important in determining whether passive surveillance is taking place.

Visibility is the degree to which an environment is made visible by elements such as lighting and uninterrupted lines of sight. Surveillance improves with good visibility. Dark or twisting streets, alleys, entrances and doorways can act as hide-outs for potential offenders and increase fears of crime. The design and positioning of lighting and the way roads and paths are laid out can prevent many of these problems and make both the physical environments and the users visible to others.

2. **Territoriality** — is a sense of ownership of one’s living or working environments. Territoriality and people’s sense of ownership are encouraged when residents identify with the space and where the space and its configuration are legible to them. A sense of ownership and responsibility improves the likelihood of passive observers intervening, and spaces should be designed and managed in ways that encourage owners/users to take responsibility for their use and maintenance. Territoriality can be increased through clearly defining public and private spaces, using the human scale, limiting unused open space and so on.

3. **Access and escape routes** — Certain types of criminal events and sites are deliberately chosen for their easy access to escape routes. Similarly, the availability of access and escape routes add to the safety of potential victims. Areas of refuge, such as vacant land where people can hide and which have clear routes of escape from a crime, are obvious hide-outs for offenders and houses or neighbourhoods near or adjacent to vacant land are often the targets of repeated burglaries. The layout of transport routes and the juxtaposition of different types of space influence the ease of access and escape. Clear signposting of streets, buildings and exit routes are important ways of assisting potential victims.

4. **Image and aesthetics** — The image projected by a building or a public area has been clearly linked to levels of crime and particularly to the fear of crime. This link is often referred to as ‘crime and grime’. Urban decay and its resultant degradation make people using these areas feel unsafe. Often this reduces the number of users, which could exacerbate the crime problem. Good design and effective management of spaces in the city are necessary to prevent precincts from becoming actual or perceived crime ‘hot spots’. Vacant land that is not maintained and unoccupied buildings can both contribute to decay, as do litter and the breakdown of services. The image of spaces can be improved by ensuring human scale in design, using attractive colours or materials, providing adequate lighting and designing for high levels of activity.

5. **Target hardening** — reduces the attractiveness or vulnerability of potential targets by, for instance, the physical strengthening of building facades or boundary walls. Walls around houses and burglar bars on windows are the most common examples of this principle. Target hardening is often the first solution that occurs to residents and designers because it often physically reduces opportunities for crime. However, the common mistake is that in so doing, other principles are violated. If target hardening of buildings obstructs lines of sight or provides havens that cannot be surveyed, the hardening is unlikely to be an effective crime prevention tool. Another form of target hardening that is becoming more prevalent in South Africa is the closing off of streets and neighbourhoods. However, this form of control has many adverse consequences that need to be considered and weighed up against possible benefits.
Some examples of CPTED initiatives cited by the CSIR include:

- reducing the opportunities for crime through well-planned pedestrian routes, appropriately designed informal trading areas, mixed-use and extended hours of use of facilities;
- limiting the potential danger posed by reducing and managing open spaces and vacant land;
- providing appropriate lighting in parks, along streets and pedestrian routes;
- providing adequate infrastructure and facilities such as roads and telecommunication to improve interaction between communities and the police; and
- managing the built environment efficiently, for example replacing light bulbs timeously, trimming trees and vegetation when and where required, collecting refuse regularly etc.

The role of planning and design professionals may include:

- developing and implementing design and urban planning guidelines aimed at reducing crime;
- designing retrospective improvement to physical environments in support of crime prevention;
- ensuring that building regulations are compatible with the principles of CPTED;
- promoting performance zoning in support of crime prevention and applying a flexible approach to zoning standards, such as reducing large areas of vacant land by identifying appropriate land uses;
- ensuring context-specific design and management of the built environment to reduce crime;
- contributing to the planning and implementation of integrated crime prevention strategies, especially regarding aspects related to the physical environment; and
- assisting with the development of appropriate by-laws.

2. Infrastructure and service provision

Infrastructural services must be appropriate for the local cultural, social and environmental conditions and must be affordable. The provision of appropriate services increases the general quality of life, reduces risks to health and sustains the balance of human settlements with the natural environment. According to Sowman and Urquhart, the golden rule for service provision is to reduce both inputs (such as installing a shower instead of a bath) and outputs (such as saving water as a result of installation of aerated taps), which will keep costs down and reduce damage to the natural environment. The type of service to be provided must be carefully considered as inappropriate service provision could result in increased costs for residents and the local authority. Sakhasone Village provides an example of cost-effective and appropriate services provision for higher-density housing. Water, electricity and sewerage were routed along roads in front of the houses in one trench and houses were as close to the roads as possible. Technology such as solar electricity, recycling of water and sanitation systems that use little or no water should be used where possible.

The Department of Housing’s Norms and Standards for Permanent Residential Structures specify the minimum level of services as a yard standpipe for water supply, a ventilated improved pit (VIP) latrine toilet for sanitation and a graded earth or gravel road with lined open stormwater channels. Internal flush toilets are the norm for higher-density housing developments and require waterborne sewerage or some form of environmentally friendly waterless on-site sanitation. The White Paper on Water and Sanitation promises access to a minimum of 25 litres of clean water per day per person. An in-house water supply is preferable, as households storing water are almost five times more likely to have diarrhoea than those who do not have to store water.

Increased dwelling unit and population densities put pressure on physical infrastructure such as roads and transport, sewerage, water and stormwater, electricity and others. Despite upgrading of existing infrastructure, Burchell and Mukherji prove that this cost will be less than housing the same number of people in low-density greenfield developments. Poulsen and Silverman state that increased densities allow for more points per line, which improves efficiency, while settlements on the periphery require new bulk service connections, with enormous cost implications.
From the outset, developers and government should recognise that the relationship between sustainability and housing provision is two-way: incorporating principles of sustainability into housing design, development, maintenance and refurbishment will not only make a significant contribution to the achievement of general sustainability objectives, but will also provide important advances in the quality, durability and cost effectiveness of housing, increasing resident satisfaction and ownership of the entire housing environment. Sustainable service provision necessitates the involvement, education and training of residents or communities in the entire service provision process as they will ultimately take ownership of and maintain and manage the services themselves.
### 2.1 Energy

Often subsidy beneficiaries cannot afford operational and maintenance costs after moving into their units. By using sustainable energy options, monthly costs can be significantly reduced, especially over the long term. Furthermore, sustainable energy options are generally healthier and safer. Education and training about sustainability should take place prior to occupation of units and thereafter on an ongoing basis. Training and accountability need to be supported by community leaders, support organisations and other stakeholders such as government. Each unit should be supplied with separate water and electricity meters. Users, developers and government need to be educated on the importance of return on investment with ecological and social costs. The lack of understanding and awareness among property developers and owners of the merits and benefits of sustainable building is still a major obstacle to the creation of sustainable built environments.

Table 35: Sustainable energy options for the home

<table>
<thead>
<tr>
<th>Sustainable energy options&lt;sup&gt;85&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cooking</strong></td>
</tr>
<tr>
<td>• Hotboxes and solar cookers are very affordable and easy to use.</td>
</tr>
<tr>
<td>• Gas rings and electric hot plates are good choices i.t.o. affordability, health and safety.</td>
</tr>
<tr>
<td>• Biogas production (the capture of gas produced by decomposting biomass and sewage) is an affordable alternative for electricity used for cooking.</td>
</tr>
<tr>
<td><strong>Lighting</strong></td>
</tr>
<tr>
<td>• Electric lighting is the best option, especially if Compact Fluorescent Light bulbs (CFLs) or Low Energy Diodes (LEDs) are used – they use ¼ the energy and last eight times longer than incandescent bulbs.</td>
</tr>
<tr>
<td><strong>Heating the home</strong></td>
</tr>
<tr>
<td>• Building an energy efficient unit giving attention to factors such as installation of ceiling, wall insulation, window size, etc.</td>
</tr>
<tr>
<td>• Shared walls in attached housing cuts building costs and saves energy.</td>
</tr>
<tr>
<td>• Gas heaters in a thermally efficient house are a safe and healthy option, but electric bar heaters are effective and more affordable.</td>
</tr>
<tr>
<td>• Avoid air-conditioning appliances.</td>
</tr>
<tr>
<td><strong>Heating water</strong></td>
</tr>
<tr>
<td>• Domestic water heating consumes a third of total domestic power used. The primary water heater should be a vertical pressurised heater rather than a combination heater. Shorter pipe runs save energy.</td>
</tr>
<tr>
<td>• Local heating devices such as instantaneous water heaters have single pipe runs and are good solutions to long pipe runs to remote supply points, saving water and energy.</td>
</tr>
<tr>
<td>• Solar water heaters (photovoltaics) can pay for themselves in 2-5 years through electricity savings – they could save households as much as 70% of their normal electricity costs.</td>
</tr>
<tr>
<td><strong>Fridges</strong></td>
</tr>
<tr>
<td>• Electric CFC-free and better insulated fridges are recommended.</td>
</tr>
<tr>
<td>• Paraffin fridges are slightly cheaper than gas fridges, but have more health and safety risks.</td>
</tr>
<tr>
<td><strong>Media appliances</strong></td>
</tr>
<tr>
<td>• Grid electricity, as solar panels are still too expensive in the absence of rebates and grants to make this a cost-effective option in affordable housing developments.</td>
</tr>
<tr>
<td>• Solar or wind-up radios.</td>
</tr>
<tr>
<td><strong>Lighting public areas</strong></td>
</tr>
<tr>
<td>• Energy conservation in the public areas can be further enhanced by the use of Low Energy Diodes (LEDs) powered by solar panels.</td>
</tr>
</tbody>
</table>

Ward<sup>86</sup> proposes a cost-benefit analysis as a useful tool to measure the viability of different energy efficiency measures and interventions, by doing a cost comparison. The Energy and Development Research Centre at the University of Cape Town analysed the costs and benefits of different energy efficiency approaches and technologies for typical low-cost housing, including shared walls in row housing, ceilings, roof and wall insulation, windows and partitions. All costs (such as initial capital outlay, replacement and operating costs) were added up and deducted from all the benefits (energy savings and avoided costs of emissions). The study...
demonstrated how these low-cost measures contribute to avoiding direct emissions of greenhouse gases. Ceilings, wall insulation and window size showed positive national economic benefit in typical low-cost housing. Building cost and energy savings related to shared walls were even more significant in row housing, while solar water heaters proved to be an attractive intervention.

2.2 Water
An in-house water supply is regarded as the minimum adequate level of water supply in urban areas. A semi-pressure water supply system is cheaper than a conventional full-pressure water supply, in which water is supplied directly to taps inside the dwelling. High water pressure causes a greater degree of leakages and tap washers and toilet cistern ball valves have to be replaced more often. In the semi-pressure water supply system, water is supplied to a tank in the roof, from where it runs down pipes and out of taps by gravitational force. Durban Metro Water successfully uses this form of on-site water supply for low-income housing projects. The consumption for multiple-tap house connections is typically 150 litres per capita per day, with the highest consumption for flush toilets and baths. Water consumption can be reduced through dual-flush toilet cisterns and low-flush toilet suites, low-flow rate showerheads and water conserving taps. Despite its excessive use of water, waterborne sewerage remains the most accepted form of sanitation as it is regarded as being convenient, clean, safe and healthy. Water usage can be minimised by using low-flush toilet suites – these use 4,5 litres instead of the nine litres that is the norm. Piped water and sewerage systems are important components of urban form and inform the configuration of plots, site (or building) layout and the design of movement routes, as they function as servitudes for these services. Relatively straight movement channels, increased densities and location of buildings close to the plot boundary abutting the street will promote more sustainable sanitation systems.

2.3 Recycling
Water conservation and management strategies for higher-density housing should include recycling of grey water (rainwater harvesting or bathwater recapture) to be used in toilet flushing (reducing potable water consumption by at least 40% per dwelling unit) and in landscaping (reducing potable water consumption by up to 60%), if the local code allows for it. Stormwater run-off should be minimised using permeable (or minimal) paving, grassed surfaces and retention systems. Consumer education and owner/tenant accountability are paramount in ensuring that water is used responsibly.

It is essential that well-functioning solid waste management systems are in place in high-density areas. This will help reduce health risks, prevent damage to the natural environment, promote employment creation and prevent unregulated dumping. Operation and maintenance of waste management systems are usually the responsibility of the local authority. However, community-based recycling projects have the potential to create employment and minimise waste disposal. All households should be required to separate their refuse into separate containers for organic waste, plastic, glass, paper and cans. Compost from kitchen waste can be successfully recycled in the community garden. The separated refuse could be managed by a resident entrepreneur and sold to recyclers. Partnerships between local authorities and communities have also proven to be effective where communities collect and transport household waste to a local dumping site. Waste management systems need to be practical, affordable and acceptable to the resident community.
3. Sustainable material use

Developers and contractors involved in higher-density housing should source their building materials from environmentally responsible manufacturers and suppliers and preferably buy from local suppliers. Materials with low embodied energy (the energy used in making and transporting the materials) should be used, as the balance shifts in multi-storey buildings due to the greater percentage of steel and concrete. Building materials should be especially durable and easy to maintain and all waste should be recycled. At the end of a building’s life, recycling and re-use will reduce the need for quarrying and other source activities and the amount of landfill required on demolition. There are large sustainability gains to be made in terms of resource consumption and environmental impact through better practice. This includes refurbishment of existing buildings as well as greater use of recycled and re-used materials.

<table>
<thead>
<tr>
<th>Material</th>
<th>Kilojoules per kilogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal</td>
<td></td>
</tr>
<tr>
<td>Steel</td>
<td>20</td>
</tr>
<tr>
<td>Steel - recycled</td>
<td>3.6 - 5.5</td>
</tr>
<tr>
<td>Aluminium by hydro-electricity</td>
<td>75</td>
</tr>
<tr>
<td>Aluminium by coal-fired power</td>
<td>167</td>
</tr>
<tr>
<td>Aluminium - recycled</td>
<td>4.7</td>
</tr>
<tr>
<td>Zinc</td>
<td>46 - 52</td>
</tr>
<tr>
<td>Plastic</td>
<td></td>
</tr>
<tr>
<td>Polythene</td>
<td>138</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>145</td>
</tr>
<tr>
<td>Polyvinyl chloride (PVC)</td>
<td>103</td>
</tr>
<tr>
<td>Polystyrene</td>
<td>45</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Cement</td>
<td>13</td>
</tr>
<tr>
<td>Glass</td>
<td>14 - 18</td>
</tr>
<tr>
<td>Tiles</td>
<td>4</td>
</tr>
<tr>
<td>Clay brick</td>
<td>4</td>
</tr>
</tbody>
</table>

Cranberry Commons Co-housing best practice project in the Greater Vancouver Regional District is a ground-oriented higher-density housing project (approximately 117 du/ha) that includes environmental sustainability features. Self-contained individual housing units are centred around extensive shared facilities including a communal kitchen and dining area, lounge, children’s play spaces, office, meeting room, guest room, library and workshop. Environmental sustainability is incorporated into most design aspects of the project. Most notable in terms of sustainable material is the use of high volume fly-ash concrete, which cuts the greenhouse gas emissions associated with the production of cement by up to 50%. Ten per cent of the wood used was reclaimed lumber.

4. Summary of key development considerations

A checklist is a valuable tool during the planning and implementation phases of medium-density housing developments to confirm that the basic requirements of intended users and the environment are met. Criteria should be based on national, provincial and local building codes and regulations, but also best practice examples in design, sustainability and community participation. Checklists should not be used rigidly and are often not exhaustive. The summary table below was compiled by drawing on the case studies, literature reviewed and DAG’s experience. As far as possible, products such as paints, flooring and other materials should be selected on the basis of their environmental credentials.
### Table 37: Checklist of key development considerations

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Application</th>
</tr>
</thead>
</table>
| General                                | • Active community participation during all phases  
• Density characteristics and building typology should be appropriately scaled in terms of existing buildings and integrated into the surrounding area  
• Social sustainability of higher density housing environments are optimised when a mix of income groups form part of the same development  
• The needs of vulnerable groups must be taken into account regarding design and process considerations  
• Building and space design, layout, orientation, material use, building finishes, should consider the influence of natural elements such as rain, wind, sun, topography especially regarding heating and cooling |
| Site planning                          | • Undertake a comprehensive site planning analysis considering all elements impacting on the housing environment  
• Local climatic conditions should be taken into account from the initial planning stages  
• Layout should respond to individual, household, community, environmental and financial considerations  
• Orientation of plots as far as possible to maximise passive solar design  
• Design streets as narrow as possible to save on infrastructure cost and to accommodate the pedestrian |
| Buildings and dwelling units           | **BUILDINGS:**  
• Buildings should be as close to and continuous along the street as possible with clearly defined but soft space transitions through the use of verandahs, low fencing, paving, planting etc  
• Avoid shading of buildings, especially the northern side, by neighbouring buildings during the day  
• Provide units in clusters instead of rows  
• Construct several small buildings instead of a few large ones  
• Low maintenance exterior finishes  
• Roof overhangs to shade window in summer and allow sun penetration in winter  
**UNITS:**  
• Free-standing units provide the largest area for heat loss and are therefore the least energy efficient  
• Multiple-household units sharing walls, floors and ceilings provide effective insulation  
• Dwelling units must meet minimum unit size requirements  
• Interior communal spaces must proportionately increase as the number of bedrooms increase  
• Units should be configured in the form of a square to minimise area exposed to the outside  
• Units and most frequently used rooms oriented north. Adequate exposure of most windows, north-facing walls, roofs to sunlight  
• Dwelling units should be well insulated to maximise energy efficiency  
• Units must be clearly and visibly numbered |
| Open space and communal facilities     | • Create public/private hierarchy of spaces  
• Recreational spaces provided for different groups  
• Locate play areas for children away from motor vehicle traffic and visible and accessible from the maximum number of dwelling units for safety  
• Facilities and amenities (e.g. offices, meeting places, trading areas, learning spaces) should be responsive to end user needs, provided on-site or on adjacent property  
• Provide commercial opportunities on ground floor level  
• Safe and screened area for washing lines  
• Provide on-street or small parking areas instead of large desolate parking lots |
| Planting and Landscaping               | • Developers and contractors should preserve top-soil on site to enable planting initiatives  
• Planting of grass, ground-covers and shrubs helps prevent soil erosion and management of run-off, and acts as natural grey water filter  
• Indigenous, deciduous trees should be planted to shade the north side (walls and windows) of the unit in summer and allow for exposure to the sun in winter to improve energy efficiency of units  
• Use drought resistant plants  
• Use grey water and rainwater harvesting and low water use (drip irrigation) systems  
• Developers and government should encourage and support productive gardening (based on permaculture principles) which provide aesthetic relief, contribute to health and wellbeing of residents, and contribute to sustainable livelihoods  
• Provide seating opportunities in communal areas |
### Energy

- Appropriate energy sources and appliances should be incorporated and form part of community capacity building initiatives

### Water

- Plumbing design and layout and design of buildings/units to coincide to encourage water efficient plumbing – provide for short pipe runs from the water heater to the supply point
- Optimum pipe sizing is critical to the performance of water saving devices
- Reduce water pressure to an optimum level in line with the specifications for the devices used in the plumbing system
- Use dual flush / low volume toilet system
- Shower heads usually deliver flow rates in excess of 16 litres/min. Install shower heads with flow rates of 4.5 litres/min which is adequate
- Install low flow taps with spray nozzle or aerator / flow controller or metering taps with predetermined quantity release

### Recycling

- Significant water savings through grey water use and rainwater harvesting for secondary purposes such as garden irrigation and toilet flushing
- Use leaves of trees, grass cuttings and organic household waste to produce compost for the communal garden and landscaped areas

### Sustainable material use

- Use exterior roofing insulation materials with high reflective and poor conductive properties
- Install a ceiling to regulate interior temperature
- Insulate walls using panelling or other systems

### Retrofitting

- Replace with energy efficient products, appliances and fixtures
Guidelines

- The way in which housing, and higher-density housing in particular, is delivered and managed can make a significant contribution to sustainability because it consumes large amounts of resources in its construction, maintenance and use; is a fixed asset with a long life; is central to quality of life and has implications beyond housing, affecting transport, health, employment and community.

- The design of higher-density housing should give due consideration to all components of sustainability, including social, institutional, environmental, physical and economic factors. Decisions should be rooted as far as possible, in ‘green’ design principles and in human needs.

- People are at the centre of sustainable development and therefore success will largely depend on each individual, household and community’s conscious choice to adopt or reject the principles of sustainable development.

- There is a need for a change of culture around sustainable housing development. Ultimately, the construction sector will have to be reinvented, from the materials used and how they are manufactured, to how development and the methods used to achieve it are viewed and how end-users are engaged to commit to them. Developers, builders, architects, planners, urban designers as well as government, tenants and owners should be involved.

- The impacts of current settlement design norms (such as single houses on large plots with full-pressure water supply, water borne sewerage, grid electricity and inadequate insulation) militate against demand-side management, resource efficiency and sustainability.

- Understanding the energy and environmental implications of different layout plans, service options, house designs and implementation approaches is crucial in the quest for sustainable housing environments.

- Sustainability objectives will be achieved only if they are taken into account at all stages from design through construction to long-term use and eventual disposal and recycling, with active community commitment, education and participation.
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II. CAPTURING OF LAND VALUES

Despite the protection of housing rights in the South African Constitution and Bill of Rights, the land and property markets exclude the poor and exacerbate existing inequalities. As a result the struggle to access land for the urban poor has become a critical issue in post-apartheid South Africa. It takes place in the context of increasing urbanisation as city economies grow rapidly and greater numbers of people move to the cities in search of better economic and livelihoods opportunities. It is approximated that the urban population on the African continent will increase from 39% in 2003 to 54% in 2030, with the most significant growth in urbanisation occurring in sub-Saharan Africa.

A wide range of complex factors impact on the availability of well-located urban land for low income housing. Significant amongst these are:

- The legacy of apartheid and colonialism, which resulted in large-scale land dispossession of Black people through legislation such as the 1913 Land Act No.27, the 1936 Trust and Land Act No. 18 and the Group Areas Act.
- The “hegemony of a market-driven development paradigm”, which implies that the market becomes the central tool for the delivery of goods and services and is based on the principles of supply and demand. Usually only those who are in a position to pay the highest price for goods and services are able to fully participate in the market. This, according to Greenberg, means that “markets are skewed towards meeting the desires of those with resources, able to pay for commodities”.
- The gradual decline and evolution of civil society in South Africa over the past decade, with many community leaders becoming local government councillors in the 1995-1996 local government elections. This weakened the civic movement which was already suffering under a decline in the spirit of voluntary involvement post the 1994 national election. The civic movement has also been increasingly marginalised by local government, who began setting up development forums and ward committees to facilitate participation in local government matters.

Brown-Luthango explores a number of mechanisms (such as land value tax, land banking and land pooling/land readjustment) which have been used in different countries to make urban land accessible; many of these require that government intervenes in the land and property market.

Land values increase when changes in land-use regulations take place (for example through rezoning), infrastructure is provided to a parcel of land and through population growth creating a demand for land. Increases in land value often result from government actions and not from the efforts of individual landowners who nonetheless usually benefit from the increased value.

Government’s creative use of mechanisms to capture unearned (increased) land value can provide additional resources, which can help the state meet its constitutional obligations. These...
value capture mechanisms can also assist in addressing unfair land market practices like speculation, bringing more land into the market and thereby reducing the price of land to more realistic levels. Well-located land would thus become more easily accessible making the provision of affordable higher-density housing on well-located land possible. Some of the value capture mechanisms examined include:

I. Land value tax

A land value tax is a tax on the value of land and excludes the value of the building or improvements on the land. A land value tax could be a site value rating, which is a tax on the value of the land only (used mostly in relation to urban land) and excluding the value of buildings and improvements. Alternatively, land value tax could be a form of composite rating, also referred to as the two-rate system. This system allows for the value of the land to be taxed at a higher rate than the value of the buildings or improvements, sometimes up to five times more. The land value tax has many advantages over a property tax that taxes both the value of the land and the building (flat rate system). In considering its advantages Solomon’ points out that land value tax:

- is adequate, fair, neutral and economical;
- intensifies land use;
- returns the value of government investment in local amenities to government;
- discourages vacant possession for speculative purposes;
- discourages urban sprawl by bringing unused land into the market;
- encourages access by bringing the price of land to more affordable levels; and
- dampens price escalation while activating the market.

Density, public transport and value capture in Hong Kong

Hong Kong is renowned for the successful integration of rail transit investments and urban development, resulting in especially high densities and benefits of agglomeration. Land prices near railway stations are generally higher than elsewhere due to the high premium placed on access to fast, efficient and reliable public transport services — more than 90% of all motorised trips in this world class city are by public transport. The railway played a crucial role in serving broader urban planning objectives in shaping the city. In 2002, approximately 41% of Hong Kong’s population lived within 500m of a station. The city presents a best-practice example of the value capture principle, where land-value increases created by rail investments are used to finance infrastructure investments through its ‘Rail + Property’ (R+P) development programme, driven by Hong Kong’s rail operator, the Metropolitan Transit Railway Corporation (MTRC).

MTRC does not receive cash subsidies from the Hong Kong government but instead receives an in-kind contribution in the form of a land grant, which provides the company exclusive development rights for land above and adjacent to its stations. The government of Hong Kong enjoys huge financial returns without having to advance any cash to MTRC. Through this programme, Hong Kong boasts a public transport system that uses property development as a tool for generating revenues that cover the costs of constructing railway improvements and provide net profits. MTRC captures the benefits of location through land leases and sales to private interests. MTRC therefore capitalises on the real-estate development potential of its stations. Apart from direct financial benefits, indirect benefits such as higher ridership through increased densities, reduced sprawl, air pollution, energy consumption and other social returns have increased.

The development of Maritime Square (see photo) is an example where R+P resulted in a mixed-use project with seamless integration between the railway station, shopping centre and high-density residential units above the station. MTRC was granted 50-year development rights by government for the site and then sold the rights at a considerable premium to underwrite the costs of building the station and portions of the airport line. The project came about due to the assessment of opportunities for physical integration at the master planning stage.
R+P projects do not only consist of high-rise development. The types of land use environments and density profiles that characterise R+P projects include:

- high-rise, predominantly office uses on small sites;
- high-rise, predominantly residential uses on small sites;
- medium-density, predominantly housing projects on medium sized plots;
- predominantly residential uses on large sites with comparatively low plot ratios; and
- mixed-use consisting of housing, offices, retail, hotels and other uses on large sites with medium plot ratios.

The authors conclude that given rapid urbanisation, “it is imperative that the most sustainable form of urbanism – the linkage of land use and public transport – be aggressively pursued” (p31) and propose that Hong Kong’s R+P programme is the best model available for sustainably financing transit and building cities.

A land-based taxation system, such as a site value tax or a two-rate/composite rating system has the potential to induce more land-intensive uses by shifting the tax burden away from buildings and improvements and onto land/site value. For example, Gihringargues that a higher tax burden on land would discourage speculation in vacant, underused, centrally located land parcels. This would encourage greater infill development and a “greater recentralisation of urban development” thereby reducing urban sprawl and bringing about greater “land use efficiency”. This can be achieved through “compact urban form, establishing ordered relationships among the places devoted to utilitarian functions such as work, shopping, recreation and socialising and at the same time maximising their compatibility, maximising accessibility (by designing a balanced transport system and reducing distances between origins and destinations) and minimising energy consumption”. By removing the tax burden from buildings/improvements and placing it on land, a land based tax system would encourage compact or “vertical development”.

Dunkleyargues that a land value tax would bring more land into the market by taking away the speculative and opportunity value of land, retaining only its economic value. This would make it easier for government to acquire land and could make well-located land more accessible for low-income housing. This view is supported by Meakinwho argues that taxing undeveloped land at the same rate as developed land will reduce land prices more quickly:

“... and will create far more opportunities for affordable housing and other property in SA’s cities. The average house in South Africa is worth around R1 million and the average undeveloped residential plot about R380,000. Tax the bare land at the R1 million [rate] and you will halve its value. Increasing land taxes further so that they can replace VAT or PAYE would altogether eliminate land entry costs. Instead, annual land use charges like rates and taxes would make raw land free while supplementing the traditional tax take”.

Until the introduction of the New Property Rates Act in 2004, municipalities in South Africa had a choice of using a flat rate system, a composite rate system, or a site value system to collect property taxes. Research by Dunkleyposits that from 1951–1984, a majority of municipalities in South Africa chose the site value tax. During this period, the towns that raised revenue from site value increased from 36 to 98 while the towns on flat rating declined from 187 to 61. Even more astounding is that, in terms of growth in the value of improvements, the cities on site value rating experienced aggregate growth of 413%, those
on the composite rating showed growth of 282% and those on the flat rate showed the lowest growth rate of 189%.15 Of all the major cities in South Africa, only Cape Town and Port Elizabeth still preferred the flat rate and their percentage growth on improvements was low compared with the average for the whole of South Africa and particularly with those cities on site-value rating.16

The government has made a systematic effort since 1994 to restructure the property tax and the new Property Rates Act has done away with land value taxation. Yet, despite the introduction of the new Property Rates Act in 2004, which extends the property tax to agricultural land, municipalities are either not taxing agricultural land or in cases where they are, the tax is based on an outdated 1939 law. This law favours owners of large tracts of land and disadvantages smaller farms because the tax rate charged for small farms is 100 times higher per hectare than for larger farms. This encourages land consolidations and land speculation, because “it makes the cost of holding on to unused or underused land very low and raises the attractiveness of agricultural land as an asset”.17 Renewed calls for the introduction of land value taxes, especially in developing countries that are facing similar development challenges, have been made.18

2. Land value increment taxation

Land value increment taxation is a tax on the increase in land value brought about by public actions such as the provision of infrastructure and services. This is the purest form of Henry George’s ideas and the best form of value capture. It has been used in a number of countries with significant success as a way to capture unearned land value as revenue and to limit speculation. The Taiwanese government managed to raise 20% of total tax revenue through the land value increment tax in 1995, although this decreased to 13.5% in 1998 because of a slow-down in the market. In Singapore the government introduced a ‘development charge’ which is similar to a land value increment tax, taxing land owners at a rate of 50% when changes in zoning rights result in an increase in land value.19 South Korea introduced the land value increment tax as a tool to discourage speculation, by levying a tax of 50% for the sale of land resold within two years after it was purchased. This followed a parliamentary inquiry, which revealed that total increases in unearned urban land values were roughly equal to the total of earned wages in the same year.20 Colombia also introduced a land value increment tax called the Participacion en Plusvalias (PP). The PP was enacted in 1997 and aimed to recover part of the increased land values resulting from the use of land use regulations in the following instances:

- Changing the designation of rural land into land for urban or suburban development
- Modification of zoning or other land use regulations
- Modification of regulations that permit greater building density”21

The law allows municipalities to capture 30–50% of land value increments, with the maximum set at 50% in order to not to discourage developers from participating. The introduction of a land value increment tax is also currently under consideration in Australia in light of their recent property boom.22

3. Land banking

Land banking refers to a process in which government acquires land in advance, which can be used for future housing projects or infrastructure developments. Land banking has been used successfully in Sweden, the Netherlands, Singapore and Malaysia.23 Some of the advantages of land banking are that it:

- “allows the purchase of land, relatively cheaply, for public purposes;”
- provides a tool to influence the pattern of development in accordance to overall planning objectives;
- can also be used to control the land market;
- can be used to prevent land speculation; and to
- recapture some of the betterment created in connection with rural-urban land development”24
For land banking programmes to be successful, it needs careful planning with very clear aims and objectives. Without this it has unintended consequences such as increased land prices. This occurred in New Delhi, where instead of regulating land prices, the introduction of a land bank actually resulted in an increase in land values. According to the UN ESCAP the municipal government should have the necessary capacity “to make informed decisions on where, when and how much land to release as well as for what purpose and at what price. It is important to realise that considerable manpower and qualified expertise is required for a land bank to be efficient”.

4. Land pooling/readjustment

Land pooling is also known as urban land consolidation, land readjustment, land re-plotting and land redistribution. It involves the pooling of a number of small plots of land into a larger plot. The municipality then provides infrastructure and services to this plot and subdivides the plot again. The municipality deducts the cost of providing the infrastructure and services from the sale of some of the plots, which means that the original owners get smaller plots, but are provided with infrastructure and services. This scheme has been successfully applied in Japan, the Republic of Korea, Taiwan and in cities in Australia and Canada. It is usually applied when there is a plan for the conversion of agricultural land into urban land. The success of a land pooling project depends on good management and financial viability. Both land pooling and land banking largely depend on the availability of highly skilled municipal officers with excellent negotiating skills to negotiate successfully with private land owners, and sufficient financial resources.

5. Full public ownership of land

This is a value capture instrument through which government retains ownership of land, but leases only the right to develop, use or transfer land to private investors. This is a significant source of revenue for Hong Kong and Singapore.

6. Right of pre-emption

Right of pre-emption is a strategy in which government pre-empts land transactions by buying the land or reserving the right of first choice to buy the land. Although not very successful in terms of capturing value, it can decrease levels of speculation as was the case in Japan, Thailand and Indonesia.

7. Land price freezing

Land price freezing is a value capture mechanism whereby government freezes the price of land in certain ‘overheated’ areas, particularly those close to major public investments to control land price increases. In Korea, although not successful in capturing value, it did make land speculation less profitable. Land price freezing was introduced with more success in France where land price freezes in ‘deferred development zones’ made possible the construction of major new towns around Paris in the 1970s.

8. Planning and zoning instruments

The state’s efforts cannot however, only be directed at collecting more money. To re-shape the urban landscape and make our cities more inclusive and sustainable, planning and zoning instruments need to be used creatively and strategically to alter the spatial arrangements of the apartheid city.
8.1 Development and zoning levies
Siochrú uses the telecommunications industry as an example to explain instruments like a development or a zoning levy. He argues that in the telecommunications industry, users are typically required to pay three different charges: a connection charge, a rental charge and a use charge. A development levy is similar to a connection charge as it is based on the cost of being connected to roads, water, drainage waste and other infrastructure. According to Siochrú, “it is the connectivity to public services and amenities which comprises most of the value of land”. A zoning levy, according to Siochrú’s analogy, would be similar to a rental charge and is levied as a payment for the specific use of a parcel of land. Development and zoning levies should be charged at a progressive rate; rural areas, for example, which are poorly serviced, should have lower levies than areas in towns and cities, which are well serviced. Income from development and zoning levies could be pooled in a central government fund and be redistributed by central government to “redress imbalances in revenue between wealthy and poorer authorities”. However, this may result in the control of the local authority being diminished.

The United Kingdom (UK) is currently investigating implementing a similar development gains levy, which it refers to as the Planning Gain Supplement (PGS). Property market data in the UK showed that the value of land increases simply because planning permission has been granted. The PGS is aimed at financing sustainable community development through infrastructure and service provision, specifically the provision of more affordable housing, and is expected to come into effect in 2008. It will be levied on land once a developer has been granted permission to develop it. The government is also considering allowing developers to claim the PGS as a business expense for tax purposes. Another proposal is to charge those developers who fail to comply and pay the PGS interest and penalties. A criticism of the PGS is that it could discourage developers from investing in land development, which could freeze the land market and lead to an increase in land prices. This does not necessarily have to be the case if development levies are set at a rate that realistically reflects the benefit for the developer of connection to infrastructure and services.

8.2 Incentive zoning
Traditionally, zoning provisions stipulate a property owner’s rights in terms of the use and development of a particular parcel of land. Zoning has the potential to create value for a particular owner, depending on the specific usage of the land allowed. Although zoning in the colonial and apartheid periods was used as a vehicle for reproducing exclusion under the guise of protecting property rights, more flexible zoning can in future be applied to direct and influence the development of land in a specific way. It can, for example, be used by government as a means of producing higher densities and discouraging wasteful layouts, thereby creating more compact settlements.

Incentive zoning is defined by Murphy and Stinson as “a development in land use regulation that encourages the creation of certain amenities and land use designs that a community wishes to promote”. Incentive zoning is a tool used in many US cities to obtain certain benefits for the community from a specific development, such as affordable housing, open spaces/parks or day care facilities. Developers are offered zoning incentives, such as a density bonus, for example, which would allow more residential units “or a greater building floor area than is otherwise permitted under the zoning ordinance”. The density bonus creates a win-win situation for both the developer and the local authority as the developer can realise greater profits due to more intensive use of the property and it encourages density and more effective use of space, and provides the community with amenities. In the US, incentive zoning has been legislated in a number of cities and has received very little opposition in terms of the legitimacy of the regulatory tool being challenged in a court of law. Incentive zoning could be very effective in the South African context, especially considering the exceptionally high rate of property development that major cities like Cape Town and Johannesburg have experienced over the last few years.

The current context requires that zoning be used as a regulatory tool, which can be applied in creative ways. Specific areas around viable transport routes, for example, could be zoned for affordable, medium-
density housing developments. Developers wishing to obtain zoning rights for construction of a shopping mall or other commercial property in the area could then obtain a rebate on a zoning levy in exchange for building a certain quota of affordable, medium-density housing. Government is constantly spending money on infrastructure such as roads and railways. According to the South African Railways Planning report, construction of a railway line currently costs the government up to R30 million per km and takes up to four years to plan. Government should use the tools at its disposal to plan very carefully for the use of land around the construction of such infrastructure to make it more equitable and allow the poor greater access to the city.

8.3 Exactions
Another planning and regulatory tool, similar in some ways to a development levy, is exactions. The difference between the two is that an exaction can take the form of a levy or ‘payments in kind’. Exactions are tools used in the US, in particular, to encourage developers to contribute towards the social costs of development. Exactions are defined as ‘conditions or financial obligations imposed on developers to aid the local government in providing public services’ and can take several forms, such as impact fees levied on developers, financing of infrastructure improvements and land donations. Exactions are contributions or payments which a developer must make to the local authority in exchange for obtaining a development permit. In San Francisco, impact fees from downtown commercial development are used for public transit improvements, low- and moderate-income housing and child care. The city of Irvine uses impact fees for traffic improvements while Fresno uses impact fees to pay for fire stations, overpasses, railroad crossings and traffic signals required by new growth. Exactions have grown in popularity as a mechanism used by local authorities to force developers to consider the impact that their developments have on the community and to compensate the community.

Exactions can be used in the following ways to create more vibrant and sustainable higher density settlements:

- **Infrastructure costs** – a local authority can enact specific legislation which makes the provision of certain infrastructure, e.g. roads, parks, schools or other services, mandatory before a new development is approved.
- **Affordable housing** – local authorities can require that the developer construct a certain percentage of affordable housing units as part of a new development (also referred to as inclusionary housing or inclusionary zoning) or that developers pay money into a housing fund.
- **Community benefits** – local authorities could also negotiate with developers to source local labour only from the community and pay a living wage, thereby ensuring that some of the benefits of development are redistributed to the broader community.

8.4 Inclusionary housing
Inclusionary housing is also referred to as inclusionary zoning or mixed-income housing. Mixed-income housing refers to housing developments that integrate a range of income groups either within the same building or in the same development. Inclusionary housing occurs when a city planning ordinance requires that a certain percentage (usually 20%) of new residential development be set aside for occupancy by families of very low, low, and moderate income levels. The two main objectives for introducing an inclusionary housing programme are to increase the local supply of affordable housing and to counter segregationist urban planning policies, to create more integrated and inclusive neighbourhoods. This is achieved by bringing together a mix of income groups, which in many instances also translates into a mix of different racial groups.
In the US and Canada, inclusionary housing contributes to the overall goal of regulating and managing urban land development. In these cases it forms part of attempts by local authorities to:

- capture increases in land value created by government interventions like the provision of infrastructure and services or through re-zoning;
- encourage developers to contribute to the cost of development because this places greater demands on local government in terms of the provision of infrastructure and services; and
- manage urban development.

After the Housing Indaba in 2005, the National Department of Housing embarked on a process to draft a national, inclusionary housing policy for South Africa. To date this has still not been finalised as government and the private sector, represented by the South African Property Owners Association (Sapoa), are undecided on the form that such a policy should take. Property developers have, in principle, pledged their support for government’s intention to draw up legislation to implement an inclusionary housing programme. However, according to Neil Gopal, the head of Sapoa, “the industry was not worried about the proposed legislation for inclusionary housing, but was still trying to persuade Minister Sisulu on incentives rather than penalties”.

In April 2007 the CEO of Sapoa again indicated the association’s preference for a “voluntary, proactive deal-driven approach” rather than the alternative proposed by the draft national inclusionary housing policy, which is a “compulsory but incentivised (CIS) approach”. A number of case studies from the US, however, show that mandatory inclusionary housing programmes are more effective in providing housing for low-income families than voluntary programmes.

The literature on mixed-income or inclusionary housing often argues that the rationale for mixing individuals from different income groups in one residential development is that it has specific social spin-offs. Firstly, it results in a ‘de-concentration of poverty’. Concentration of poverty is used to describe a situation in which large numbers of poor people are located in specific areas with very little opportunity to move into areas that are more affluent. This concentration of poverty has very severe social costs. According to the Joseph Rowntree Foundation:

“… research studies from both the United States and the United Kingdom indicate that concentrated poverty limits opportunities for people above and beyond their own personal circumstances as it reduces local private sector activity, limits local job networks and employment ambitions, exerts downward pressure on school quality, stimulates high levels of crime and disorder and exacerbates health inequalities”.

Housing is about more than just shelter and determines an individual’s access to other services and infrastructure like schools, clinics, job opportunities and shops. As such, the location of housing “defines the geography of opportunity”. Inclusionary housing has the potential to address negative social factors by putting low-income families closer to economic opportunities, thereby:

“… reducing the mismatch between available jobs and housing supply and locating low-income households closer to work opportunities, which also has positive spin-offs for the economy. However, low-income families spend the greatest proportion of their income on housing and transport. According to the State of the Cities Report very poor households in South Africa’s major cities spend up to 58% of their income on housing and transport and poor households spend 23% of their income on transport alone. Providing affordable housing to low and moderate income families closer to their places of work will ensure that they have more disposable income which they can use to pay for goods and services which in turn will stimulate local economic development. Others argue that living in mixed-income communities gives young children access to better schools and to positive role-models. Studies done in several American cities and districts show that ‘the difference between a poor child’s attending a school where 80% of classmates are also poor and that child’s attending a school where 80% of classmates are middle-class, would on average be a 13 to 15 percentile improvement in the child’s test scores’.”

These positive socio-economic spin-offs can however only be achieved if the inclusionary housing programme is specifically designed to facilitate the access of low-income households to improved social services and economic opportunity.
The Joseph Rowntree Foundation argues that mixed-income developments “should proceed from areas of market strength, nearby employment, amenities and infrastructure”. This sentiment is shared by South African property economist Francois Viruly, who argues that building inclusionary housing near infrastructure such as parks, clinics and schools will eventually determine the success of such developments. If not, inclusionary housing will not result in any positive benefits for low-income families and will not even achieve any meaningful integration between different income groups. While an inclusionary housing programme will not deliver affordable housing at the scale required to eradicate the huge housing backlog, it has the potential to play a role in addressing the after-effects of apartheid’s spatial planning, which are still evident in racially and income-segregated communities and in the enormous spatial and socio-economic inequalities between these communities. The provision of affordable higher-density housing on well-located land has significant potential as a housing typology for the delivery of inclusionary housing.
Guidelines

- The land and property markets exclude the poor and exacerbate existing inequalities. In the context of increasing urbanisation as city economies grow rapidly and greater numbers of people move to the cities in search of better economic and livelihoods opportunities, the struggle to access land for the urban poor has become a critical issue in post-apartheid South Africa.

- Government’s creative use of mechanisms to capture unearned (increased) land value can provide additional resources, which can help it meet its constitutional obligations in maximising its ability to restructure physical and social environments. These value capture mechanisms can also assist in addressing unfair land market practices like speculation, bringing more well-located land into the market and thereby reducing the price of land to more realistic levels. This would encourage greater infill development, thereby reducing urban sprawl and bringing about greater land use efficiency through compact urban form, and minimising energy consumption.

- Appropriate use of a range of value capture mechanisms (such as land value tax, land banking, land pooling/land readjustment, public ownership of land, land price freezing) will increase the availability or affordability of land for lower income housing development, making it easier for government to acquire land; discourage urban sprawl by bringing unused land that could be densified into the market; and support the provision of higher-density housing in strategic locations such as in the vicinity of public transport interchanges.

- The State’s efforts cannot however, only be directed at collecting more money. To re-shape the urban landscape and make our cities more inclusive, compact and sustainable, planning and zoning instruments need to be used creatively and strategically to alter the spatial arrangements of the apartheid city. This includes development and zoning levies, incentive zoning in the form of density bonuses, exactions to contribute to higher-density housing development, and inclusionary or mixed-income housing.

- In directing urban land development for the common good, well-located land would become more easily accessible, making the provision of affordable higher-density housing on well-located land possible.
Endnotes

1. This section relies on Mercy Brown-Luthango’s work for the Development Action Group’s Value Capture Impact Area and Urban Landmark entitled Capturing Unearned Value/ Leaks To Assist Markets to Work for the Poor 2006b and Voices of the Poor: A Literature Review 2007
5. Ibid.
8. Gihring, TA 1999:63
9. Gihring, TA 1999:64
10. Harris, CL n.d.
12. An extra premium placed on the price of a parcel of land, because of the demand for that parcel of land
15. Dunkley, G 2000 in Brown-Luthango, M 2006b. Dunkley’s study covered the 48 largest cities in South Africa, each with a total value of R200 million in 1984. Growth here refers to the increase in capital investment as a percentage over the ten year period, excluding the land values.
24. Ibid.
25. Ibid.
27. Doebele 2001 in Brown-Luthango, M 2006b
28. Ibid.
30. Ibid.
32. Cooper, Y 2006 in Brown-Luthango, M 2006b
33. Geoffrey Leaver Solicitors 2006 in Brown-Luthango, M 2006b
34. Wetzel, D 2004 in Brown-Luthango, M 2006b
35. Siochrú, E 2004 in Brown-Luthango, M 2006b
36. Murphy, M and J Stinson 1996 in Brown-Luthango, M 2006b
37. Ibid.
38. Personal communication with Head of Planning at the South African Commuter Railway Corporation in Brown-Luthango, M 2006b
39. Freeman, B, Shigley P and Fulton, W in Brown-Luthango, M 2006b
41. Freeman et al. in Brown-Luthango, M 2006b
42. Ibid.
43. Bhengu, X 2006 in Brown-Luthango, M 2006b
44. Freeman et al. in Brown-Luthango, M 2006b
52. Joseph Rowntree Foundation 92005 in Brown-Luthango, M 2006b
4. A SUSTAINABLE LIVELIHOODS APPROACH

“Like slavery and apartheid, poverty is not natural. It is man-made and can be overcome and eradicated by the actions of human beings.”


Aliber\(^1\) defines poverty as “the inability of households, perhaps lack of opportunity, to better their circumstances over time or to sustain themselves through difficult times”. Although many changes have occurred in South Africa since 1994, poverty is still rife and many households struggle to obtain the bare minimum to sustain themselves. An adult earning less than R354 per month is considered to live below the national poverty line. According to the 2001 Census figures, approximately 16% of those between 15 and 65 years old who are employed earn below R400 per month.

Poverty is not only about income and assets but also about health, life expectancy, diet, education, security, access to vital resources and other living standards. It is a vicious cycle that affects every part of a person, socially, economically, politically, psychologically, culturally and environmentally.

The sustainable livelihoods approach is complex and often misunderstood. However, it is invaluable in informing development and project planning at different scales, and in strengthening and monitoring the effectiveness of development initiatives, especially in communities at risk. The ‘livelihoods framework’ is a tool for understanding how households draw on capabilities and assets to develop livelihood strategies made up of a range of activities. It defines and categorises the different types of assets and entitlements which households have access to, examines the different factors in the local and wider environment that influence household livelihood security and studies the connections between the local or micro situation and actors, institutions and processes active in the wider world.

The case studies demonstrate the importance of the participatory or appreciative approach, wherein communities are actively involved in the development and upholding of their housing environments. Special reference is made to the Sakhasonke Village and Carr Gardens projects, as well as some of the bodies corporate of Springfield Terrace.

Working with a framework requires an understanding of its different elements and the connections between them. However, because people view the world differently and their theories about the relations between things differ, frameworks are continually contested, adapted and refined.\(^2\)

\(^1\) Aliber

\(^2\) MULTIPLE LIVELIHOOD STRATEGIES

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The household triangle\(^1\)
In the early 1990s, Chambers and Conway built on research and ideas put forward by the World Commission on Environment and Development and developed a definition of livelihoods and the factors that contribute to their sustainability. Their definition was modified by DFID (UK Department for International Development) in 1999 and is now being widely used:

“A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from shocks and stresses and maintain and enhance its capabilities and assets both now and in the future, whilst not undermining the natural resource base.”

Every household has a variety of capabilities and assets. Household livelihood security is often affected by the ability to diversify livelihood sources. The more diverse a household’s livelihood strategies are, the bigger its capability and asset base and the more secure it is. The smaller a household’s asset base is, the more vulnerable it is likely to be. Its ability to cope with, and recover from, shocks like retrenchment and stresses like inflation is reduced.

Sustainable livelihoods theory defines assets as follows:

1. **Natural (environmental)** capital – natural resources such as land, water, wildlife, biodiversity and environmental resources.
2. **Physical capital** – basic infrastructure including water, sanitation, energy, transport, communications, housing and the means and equipment of production.
3. **Human capital** – health, knowledge, skills, information, and the ability to labour.
4. **Social capital** – social resources such as relationships of trust, membership of groups, networks, and access to wider institutions.
5. **Financial capital** – financial resources including regular remittances or pensions, savings, and supplies of credit.

McLeod proposes the addition of two new assets: institutional knowledge and institutional or political capital. Other livelihoods definitions put people more at the centre, with added focus on issues of ownership, access and decision-making, such as the one below:

“People’s capacity to generate and maintain their means of living, enhances their well-being and that of future generations. These capacities are contingent upon the availability and accessibility of options which are ecological, economic and political and which are predicated on equity, ownership of resources and participatory decision making.”

A livelihoods approach to development includes assessment criteria and indicators of livelihood sustainability and ways to monitor progress towards more sustainable development. It is also able to assist in identifying strategies to reduce disaster risk and promote livelihood security. Most importantly, the livelihoods framework emphasises understanding the household, how households differ from one another, and how they relate to each other (inter and intra-household relations). It facilitates an understanding of different ideas about well-being and different levels of vulnerability and resilience. Household livelihood strategies involve allocating roles and deciding who does which type of work, how household income is spent, who
is prioritised for education, and so on. The household is a bargaining space where household members negotiate important decisions that affect their livelihoods. The livelihoods framework explores the power, control and influence that different members of the household (based for instance on gender and age considerations) have over the assets, activities and capabilities of the household. It also interrogates how livelihood shocks and stresses affect power and control inside the household. A household’s livelihood options are enhanced or restricted by factors in the external environment and it is important to monitor the changing external environment to understand the pressures and opportunities that inform household livelihood strategies.

The livelihoods framework therefore, helps to:
- identify (and value) what people are already doing to cope with risk and uncertainty;
- make the connections between factors that constrain or enhance their livelihoods, and policies and institutions in the wider environment; and
- identify measures that can strengthen assets, enhance capabilities and reduce vulnerability.

It is important that housing is integrated with the surrounding area to improve access to opportunities – physically, functionally and institutionally. For example, spaces for small economic activities can be provided through flexible design of dwelling units or by units especially built for trading purposes. However, business activities should not cause disturbance to other residents or health and safety hazards.

Sustainable livelihoods considerations during planning and implementation may result in a range of positive by-products such as higher levels of community cohesion and household satisfaction, lower levels
of poverty (income, social and environmental poverty), as well as higher levels of ‘custodianship’ of the immediate housing environment. Unfortunately, the contrary is likely to result in adverse conditions with significant implications for sustainability on household, community and city-wide levels, as is demonstrated by the Stock Road, Weltevreden Valley and Missionvale projects. Ultimately, the livelihoods framework shows key links between household and local situations, and the policies and programmes at various levels, which can either provide opportunities for people or make their situations worse.

Policies, institutions and processes (at a household, national and even international level) determine options for livelihood strategies as well as access to decision-making bodies and external sources of influence. Organisations, in both the public and private sectors, decide and implement policies, legislation and regulations and undertake activities that affect the livelihoods of urban poor people.

Majale suggests that most regulatory frameworks in the urban South are incongruous with the realities of poor communities and are a major impediment to the achievement of sustainable livelihoods. This is largely due to the excessively high standards and complex, time-consuming procedures conforming to official requirements. The effect of inappropriate regulatory frameworks is especially constraining to home-based enterprises (HBEs), which comprise all entrepreneurial activities that take place in the home, regardless of their scale. The use of residential space for HBEs is widespread, although often unapproved by planning authorities. HBEs are expected to fulfill regulations pertaining to not only housing but also employment. The former tend to focus on space standards for different room types, construction, ventilation, daylighting and fire prevention. Regulatory constraints on HBEs perpetuate the informality of employment opportunities open to poor men and women in urban areas, discourage asset accumulation and access to credit and increase the vulnerability of workers. Research into how low-income households initiate extensions to existing dwellings and how they use space for HBEs clearly demonstrates the difference between the intentions of policy-makers and designers and the needs and priorities of the occupants. The case studies prove that changes made to housing by occupants that contravene current regulations do not necessarily constitute rampant disorder but rather “a shifting of the boundaries of acceptability in a people-ward direction” which strengthens livelihoods and reduces vulnerability.

The sustainable livelihoods approach offers both a conceptual and programming framework for sustainable poverty reduction. Unlike more traditional approaches that tackle poverty by identifying and addressing the needs of poor people, the sustainable livelihoods approach seeks to improve their lives by building on their assets.
Guidelines

- The ‘livelihoods framework’ is a tool for understanding how households draw on capabilities and assets to develop livelihood strategies made up of a range of activities. It defines and categorises the different types of assets and entitlements which households have access to, examines the different factors in the local and wider environment that influence household livelihood security and studies the connections between the local or micro situation and actors, institutions and processes active in the wider world. Unlike more traditional approaches that tackle poverty by identifying and addressing the needs of poor people, the sustainable livelihoods approach seeks to improve their lives by building on their assets.

- Higher-density housing delivered through an integrated approach complements the promotion of economic development and opportunities for sustainable livelihoods. A livelihoods approach enables implementing agents and communities to design processes that take into consideration diversity and vulnerability and recognises that households and livelihoods are constantly changing in response to shocks, stresses and seasonality.

- Most regulatory frameworks are incongruous with the realities of poor communities and are a major impediment to the achievement of sustainable livelihoods. This is largely due to the excessively high standards and complex, time-consuming procedures conforming to official requirements.

- Successful poverty reduction strategies have to address a range of issues over time, while a holistic diagnosis achievable through the livelihoods framework allows for the identification of the most strategic interventions.

- A participatory, livelihoods approach to developing higher-density housing provides a useful framework for monitoring the effects of the development initiative, providing indicators of livelihood sustainability, identifying unintended consequences, and devising meaningful interventions.

- The livelihoods framework assists in identifying (and valuing) what people are already doing to cope with risk and uncertainty; makes the connections between factors that constrain or enhance their livelihoods, and policies and institutions in the wider environment; and identifies measures that can strengthen assets, enhance capabilities and reduce vulnerability.
Endnotes

1. Aliber, M 2001:pv
2. De Satgé, R 2002a
3. Adapted from De Satgé, R 2002a
4. Carney 1999:4 in De Satgé, R 2002a
5. Titi and Singh 1994 in De Satgé, R 2002a
7. Majale, M 2002
8. Tipple 2001:3 in Majale, M 2002
9. UNDP 1999 in Majale, M 2002
5. COMMUNITY PARTICIPATION AND LEADERSHIP DEVELOPMENT

Poor people in South Africa vote and play their part in civic structures and forums, but get little in return for their participation in democracy. Despite being occasionally 'consulted' about their needs, the voices of poor urban residents seldom reach policy-makers. For instance, IDP processes lack credibility and budget priorities tend to be set by more powerful actors like government structures and business.¹

The case studies documented in this book that best met the needs of residents displayed higher levels of participation by residents and higher levels of leadership. Examples are Sakhasone Village (design, implementation and community projects), Newtown Housing Co-operative (leadership, maintenance, community projects), Carr Gardens (community activities) and Washington Heights (project initiation, design and construction, leadership). However, in projects such as the N2 Gateway (Phase I) and Stock Road, flawed assumptions about the needs of the beneficiaries resulted in conflict between stakeholders and dissatisfaction with the housing environment.

In cases where there was meaningful participation, the participation processes were time consuming and intensive and there was considerable capacity building of committee members and beneficiaries through workshops and training courses. Access to information and leadership skills are necessary to facilitate informed and collective participation in urban development policy formation and practice and to develop strong leaders. It is notable that in most cases the capacity building of beneficiaries and facilitation of the participation process is not implemented by the state, but by outside agencies.

These case studies demonstrate the fundamental impact that citizenship, resident participation and leadership have on the sustainability of a community or housing project. In rental housing projects such as Carr Gardens, residents conveyed the need for some community institutional arrangement and the N2 Gateway - Joe Slovo (Phase I) makes obvious the important role of residents' bodies or committees. Community participation should thus be considered an essential element of any sustainable development project.

Strong leadership and community cohesion contribute significantly to communities’ sense of ownership of the housing environment. The case studies demonstrate that all components of sustainability are affected by a community's ability to organise itself and participate actively in its housing environment. The effect of a lack of continued active participation is clearly manifested in different aspects of the projects.

Community participation processes in development projects should incorporate, as much as possible, the development of skills and abilities which will increase the sustainability of the community and strengthen citizenry; these should include enhancing:

• understanding of the concepts of development and leadership;
• skills such as financial management, meeting procedures, facilitation and communication;
• understanding of rights-based approaches to development, advocacy and lobbying, gender, diversity and conflict management; and
• leadership development for the multiplication of community-centred development projects.
The collective efforts and commitment of the body corporate of one of Springfield Terrace’s sectional title blocks stand as an excellent example of community members taking responsibility for, and contributing positively to, the improvement of their housing situation. Similarly, members of Sakhasonke Village are actively involved in most aspects of life in their village in an effort to meet the widest range of community needs. On the other hand, the absence of leadership and community cohesion in Missionvale and Weltevreden Valley is more than just physically visible in the project areas.

Many NGOs can partner communities to offer leadership development but resources for this have become increasingly scarce. As a crucial component of successful medium-density housing delivery, government will have to invest the resources for leadership development within beneficiary communities.

The aim of most development programmes (such as the delivery of housing or the implementation of community projects) is to bring about change. However, not all development works towards the benefit of communities or leads to effective and sustainable change. Developers are often market driven and look at development as a strategic intervention through which they can make a profit. In many cases, when they consult with communities, they create expectations of communities benefiting if they enter into partnership with them. However, these communities, such as Stock Road and N2 Gateway (Phase 1), often find themselves disillusioned.

A community will only take ownership of a community project if they are consulted regularly and are able to participate in decision-making. This type of leadership is referred to as collective leadership and is a process whereby leadership is not provided by one person alone but by a group of people, for example, a democratically elected committee.

The goals of participatory, just and sustainable development can only be achieved through a process of empowerment in which the community actively participates. Community development is not a once-off project, but a learning experience for the community, which helps them to develop a deeper understanding of their world and the world around them. Through participatory development processes they are able to:

- discuss, analyse and reflect on their situation and needs;
- make informed decisions; and
- develop self-confidence and self-esteem to challenge the status quo and to follow through with their plans even when obstacles are identified.

Empowerment does not happen simply as a result of community involvement in making decisions. There are many examples where communities were not allowed to fully participate in the development process. In such examples the community’s perspective or desires were set aside and the community voice was effectively ignored. In other examples, promises made to communities never materialised.
The empowerment process also does not mean that it is only through participation that communities can achieve power. Rogers describes the empowerment process as people gaining an understanding of and control over social, economic and/or political forces in order to improve their standing in society. The effectiveness of change and community development depends on the participation of the community in their own development process and how they use their newly learned skills, knowledge and values. Rogers further argues:

“... the aim of development is to help all people to enhance their contribution by identifying, developing and harnessing their potential. In this way, peripheral groups can be legitimated to society as a whole, the invisible can be seen, the voiceless can be heard to speak for themselves; those who feel negatively about themselves can begin to see their positive contribution to the welfare of themselves and others. And this becomes a continuous process: for as the individuals or groups develop the ability and the confidence to see and to use more fully their own power, the process of development becomes self-generating”.

Advantages of community participation include the following:

- communities take ownership of their own development;
- communities voice their own needs, aspirations and wishes;
- achievement of “self reliance, freedom of action and thinking, decision-making and executions”;
- communities realise that their knowledge and thinking are important;
- communities understand and exercise their rights and responsibilities as citizens;
- communities realise the power of collective action;
- community struggles help people to identify and sympathise with others experiencing similar problems; and
- communities act, utilising their power to improve their living conditions.

Notwithstanding its benefits, critical community participation may cause the delivery process to take longer than where the community is only consulted. Sometimes time available for community participation is tempered by the interests of those funding development interventions, who may prescribe that delivery occurs quickly, leaving no time for thorough community participation processes. Regardless, in developing medium-density housing it is important to realise that development projects or initiatives will only have legitimacy if there is a thorough consultation and participation process with all stakeholders in the community and if the community feels that it can trust the change agent. Participation has to be a golden thread running through the entire delivery project cycle to ensure ongoing legitimacy within the community.

The presence of strong social ties in a community enables community members to manage risk and vulnerability. Social capital positively influences co-operation between government, communities and NGOs and promotes participation in policy making and government processes. Clubs, community organisations, associations, as well as strong relations among neighbours and families, are indicators of social capital. A large number of groups and organisations in a community increase that community’s welfare. For example, these factors were present in Carr Gardens and Sakhasonke where residents also displayed relatively high levels of satisfaction with the overall housing environment.

The concentration of these types of networks within a community is referred to as bonding. However, bonding can also have negative effects, such as restrictions on individual freedom, a demand for conformity and restrictions in human capital accumulation. The horizontal networks that develop between communities...
is referred to as bridging. In addition, social capital also refers to links on a vertical level. This linking or scaling relates to networks among communities, government, the private sector and other social role players. Linking communities with these groups (and vice versa) has the potential to facilitate access to formal structures and to connect them with institutions. An intermediary such as an NGO is often needed to facilitate the building of networks between heterogeneous structures. High levels of bonding and bridging achieve a favourable combination of strong intra-community ties combined with strong extra-community linkages, which result in social opportunity. Importantly, the ability of a group or community to act collectively depends on opportunities created by the existing institutional framework (‘good governance’).

Current South African research and literature on the subject of social capital formation is inadequate. However, the importance of developing social capital lies at the core of the shift from provision of housing alone to the development of sustainable human settlements. The Social Capital Formation Strategy is one of the eight pillars of iKapa Elhlumayo, the Growth and Development Strategy of the Western Cape Provincial Government, which envisions shared growth and ‘a home for all’. Their definition states that:

“Social capital is referred to as the institutions, relationships, norms and networks that shape the quality and quantity of society’s social interactions and enables collective action.”

The social capital approach is people-centred and considers networks, addresses issues of building trust and co-operation, and investigates the interaction between stakeholders, individuals, organisations and institutions, and their potential for collective action to mobilise resources.

The concept of social capital is, however, widely criticised by academics, mainly because of the many definitions of the concept. In a review of several definitions, Gomulia derived the following working definition:

“Social capital is the capacity of networks to mobilise resources to obtain beneficial outcomes for individuals. These networks are built between individuals and they are able to mobilise resources if individuals have developed the following common features in relating to one another. Firstly, the most important feature is trust, secondly, individuals must have instantiated common norms (reciprocity, solidarity, honesty, mutual support) and thirdly, they need to communicate frequently with each other. Depending on the level of trust and the norms that mobilise networks, the relationship between the network actors and the desired beneficial outcomes vary. Networks are the key term in defining social capital because social capital can only become tangible through these networks.”

On the subject of social capital and participation, the Western Cape’s Social Capital Formation Strategy stated: “… the country’s Constitution establishes the participatory nature of our democracy. This participation needs to extend beyond periodic voting for representatives”. It further states that participation should include:

“… government working together with different actors within civil society to deliver services and generally ensure the population’s well-being. Accepting this approach will mean that government departments cannot continue doing ‘business as usual’. Government needs to see civil society as people who can help them achieve their mission, rather than an obstacle or interferers… Government also needs to abandon any idea that it ‘knows best’ and instead work with and build on the strengths and knowledge of communities”.

The Strategy states that strengthening social capital will not in itself directly lead to job creation, but will help to ensure that communities in which unemployment rates are high do not suffer to the same extent as they would otherwise. It will also create a more conducive environment for investment and employment creation. This in turn may help to address the unemployment problem. The Social Capital Formation Strategy foresees implementing programmes that support the formation of social capital by the Department of Provincial and Local Government. These will include five initiatives that:

1. Aim to build social capital through developing integrated human settlements where the focus shifts from quantity to considering the quality of the neighbourhood. This includes consideration of how geographic
location and provision of opportunities for social interaction contribute to creating quality human settlements. Quality concerns include design issues such as safe access to toilet facilities (especially for women), the relationship of the house door to the neighbourhood, and the possible multi-functionality of the house (running a spaza shop, crèche, hairdressing salon, sewing business, etc.).

2. Promote mixed-use neighbourhoods to ensure that areas are people friendly and safe at night. To promote bridging and linking capital, provincial government will encourage mixed-income neighbourhoods, and neighbourhoods where newer immigrants and those who have lived longer in the province can learn to live and work together.

3. Give security of tenure and rights to inheritance of the housing unit/dwelling, and a range of options such as affordable rental housing. Tenure security for women and children is threatened under customary law if a spouse dies. The Department of Provincial and Local Government is committed to distributing templates for wills and title deeds to protect parties.

4. Recognise the impact of the process of creation of housing on end-user communities. Partnerships such as the People’s Housing Process will continue. The delivery is sometimes slower, but there is higher buy-in and empowerment. The creation of more unique and interesting neighbourhoods than contractor-built neighbourhoods will be aimed for.

5. Promote higher-density settlements closer to opportunities and services, which will undermine racial segregation. The location of housing projects is conducive to urban sprawl and environmentally unsustainable, and promotes poverty for those far from economic opportunities and social amenities.

Positive developmental outcomes originate in networks that mobilise resources, such as economic assets in the form of income and employment, as well as assets such as information, personal support, political participation and enforcement of rights. Moreover, individuals with better living conditions are likely to have more resources to connect with other people and organisations. Woolcock put this pertinently:

“Living on the margins of existence, the social capital of the poor is the one asset they can potentially draw upon to help negotiate their way through an unpredictable and unforgiving world. As Dordick astutely notes, the very poor have ‘something left to lose,’ namely each other. While much of the discourse surrounding poor people and poor economies is one of deficits, a virtue of the social capital perspective is that it allow theorists, policy makers and practitioners to take an approach that recognises the assets of poor communities.”
Guidelines

- The ‘social capital’ formation approach is people-centered and considers networks, addresses issues of building trust and co-operation, and investigates the interaction between stakeholders, individuals, organisations and institutions, and their potential for collective action to mobilise resources.

- There are positive linkages between social capital formation and developmental outcomes: projects that best meet the needs of residents display higher levels of participation by residents and higher levels of leadership. Therefore, the importance of developing social capital lies at the core of the shift from provision of housing alone to the development of sustainable human settlements. The quality and extent of leadership, citizenship and resident participation has a profound impact on the sustainability of a community or human settlement project.

- All stakeholders involved in the development of higher-density housing must place the ongoing development of social capital and community participation at the centre of project planning processes – before, during and after implementation.

- Participatory development processes empower communities by enabling them to discuss, analyse and reflect on their situation and needs, make informed decisions and develop self-confidence and self-esteem to challenge the status quo and to follow through with their plans even when obstacles are identified.

- The formation and support of active and knowledgeable leadership from within poor communities and the facilitation of collective participation in urban development policy formation and practice should be supported by government and its implementing agents.

- The ability of individuals and groups to mobilise resources on the basis of trust, common norms and constructive communication, together with the prioritisation of information sharing, skills training, learning and education, will contribute to the formation of networks that increase community participation, empowerment and sustainability.

- Social capital positively influences co-operation between government, communities and NGOs and promotes participation in policy-making and government processes. The provision of sufficient financial and human resources for meaningful and sustained community participation and leadership and capacity development should become part of government’s engagement strategy and delivery mechanism alongside the formation of appropriate platforms to engage at the local level.

- Notwithstanding its benefits, critical community participation and capacity development may cause the delivery process to take longer than where the community is merely consulted. The development of medium-density housing projects and initiatives will only gain legitimacy if there is a thorough participation process with all stakeholders in the community and if the community feels that it can trust the change agent.
Endnotes

1. Richard Ballard in Bénit-Gbeaffou, C 2007
5. Gomulia, C 2006
6. Department of the Premier: Western Cape 2005:6
7. Gomulia, C 2006:9
8. Department of the Premier: Western Cape 2005:24
9. Ibid.
6. MEETING THE NEEDS OF VULNERABLE PEOPLE

Special needs housing should not be equated with traditional family housing as defined in the subsidy Housing Code. Special needs housing is a facility providing safe and secure accommodation with support facilities and services. The resource book on higher-density housing does not investigate special needs housing per se. Rather, based on the case studies and current literature, proposals that are mindful of the need to consider housing – and in this instance, higher-density housing – for people with special needs should form part of a larger welfare package in an integrated and inter-sectoral approach. Higher-density housing lends itself well to catering for the needs of vulnerable people.

Vulnerable groups or people with special needs are not a homogeneous group. Each sub-group and individual within sub-groups has a variety of needs. People with special needs who fall within the lowest income brackets are especially at risk of poverty and destitution as they can least afford private services and facilities. Definitions of vulnerable groups vary. According to Wicht, vulnerable groups are created by many factors such as:

- rapid urbanisation;
- high unemployment levels;
- increasing levels of poverty;
- marginal opportunities or support for sustainable livelihoods;
- cultures of violence and gangsterism; and
- high substance abuse.

These result in the loss of dignity, humanity and self-respect, and the consequent lack of a social safety net to provide support and services. As global socio-economic conditions worsen, greater numbers of citizens will fall into the category of vulnerable groups. It is important to consider the needs of vulnerable groups in the planning and implementation of development processes and projects. Special needs groups considered in this book include people living with HIV/AIDS, the elderly, people with physical disabilities, children and youth (orphans and child-headed households), the unemployed and women.

A range of special needs exists in any prospective project and appropriate approaches are needed to address them. Inter-sectoral responses whereby housing, welfare and other partners work together are required. Policies and resources should not be allocated to meeting only the shelter needs of people with special needs if their other needs are more urgent, or if their other needs result in people being unable to retain the shelter once it is provided.

BNG does not provide details on special needs housing. Moreover, a coherent policy has not yet been formulated nationally, and current housing policy does not provide mechanisms for organisations to access subsidies for special needs housing. This is in spite of the South African Constitution’s Bill of Rights that seeks to preserve and enhance human dignity and substantive equality.

So far, the provincial governments of Gauteng, KwaZulu-Natal and the Western Cape have attempted to formulate, to varying degrees, policies relating to special needs housing; additionally, the Social Housing Foundation launched a Special Needs Housing Forum in October 2005 to address the huge gap in the special needs housing sector.

Generally, the case studies make provision for residents with physical disabilities and the elderly to access ground floor or single-storey units. Ramps for wheelchairs and corridors wide enough for wheelchair access were provided for the physically disabled in Carr Gardens and Newtown Housing Co-operative, while an additional subsidy was accessed for the provision of wheelchair ramps and bath grab rails in some single-storey units in Stock Road. People with special needs were allocated ground floor units in the N2 Gateway (Phase 1). Involvement of the elderly is encouraged in Sakhasonke Village’s food garden and the HIV/AIDS project. Often women’s child-care, domestic and care-giving responsibilities prevent them from
1. Women

Inequality in South African cities is unacceptably high, displaying measures similar to some of the world’s most unequal societies as indicated by Gini-coefficients. Most importantly, women bear the burden of poverty and inequality, with significant implications for their housing rights. The insecurity of their economic circumstances makes it more difficult for women to access adequate housing. Data has revealed that women constitute a large portion of the new migrants to the city as they move from rural to urban areas in search of employment and a better life.

Several factors impede women’s access to housing including their specific economic conditions and social factors such as:

- the continued dominance of patriarchal practices;
- customary and religious laws;
- domestic violence; and
- HIV/AIDS.

A time-spent study by Budlender in 2001 found that women aged ten years and above spend an average of 216 minutes a day on unpaid housework, compared with men, who spend an average of 83 minutes on the same tasks. This reduces opportunities for women to undertake paid work, negatively impacts on their chances for mobility in the workplace and increases their need to engage in survivalist economic activities or transactional relationships. When women are able to find employment, it is usually unskilled, low-paid and informal.

In 2001, two out of five employed women worked in unskilled jobs and one out of five employed women earned R200 or less per month, compared with only 9% of employed men. JHC’s Community Development department identifies income-earning opportunities and skills needs and arranges training programmes accordingly for unemployed residents of their buildings. These include beadwork and a three-month certified training programme in early childhood development to help tenants set up childcare facilities at their buildings or elsewhere in the city. The garden project, HIV/AIDS support centre, skills and business training at Sakhasonke contribute to the empowerment of the destitute and unemployed. In the Sakhasonke Village project women contractors were specifically invited to participate in the construction process. Specific tasks were reserved for them, such as painting and paving.

Despite women’s pivotal role in the housing environment, the case studies found that little design attention, if any, was given to their special needs. There were only a few examples of security considerations. Carr Gardens improved security and safety through burglar proofing, 24-hour security and general lighting in the form of light fittings fixed against buildings. Newtown Housing Co-operative installed strategically placed lighting (although this has regular maintenance problems). For households to control the public space better, the number of households sharing a staircase was reduced to no more than six in Newtown and to three in Springfield Terrace. Site layout and building design considerations such as courtyard configurations improve surveillance and increase safety for women and children in Sakhasonke Village, N2 Gateway (Phase I), Newtown Housing Co-operative, Missionvale and Samora Machel.

2. People affected by HIV and AIDS

The Department of Housing’s HIV/AIDS Framework Document emphasises that in responding to the impacts of HIV/AIDS on housing and human settlements, interventions must be based within a human rights framework, and should be considered holistically and not perceived as a medical concern only.
The City of Cape Town’s HIV/AIDS/TB Multi-Sectoral Strategy acknowledges that “HIV/AIDS is not only a human tragedy, but a development dilemma as well”\textsuperscript{11}, and that many of the most significant HIV/AIDS interventions are most effectively undertaken at local levels as it is at this level that individuals, households, communities, organisations and businesses typically experience the effects of the disease most directly. This highlights the role and response of local authorities in terms of their mandate, given that as structures of government, they are closest to citizens and are providers of key developmental services. The report contends that the most important challenge for municipalities is to shift paradigms from considering HIV/AIDS as primarily: \textsuperscript{12}

“... a health and behavioural concern, to recognising how poverty, gender inequality, joblessness, lack of food security, inadequate shelter and lack of basic services, income inequality, despondency and lack of future prospects, amongst others, conspire to make people more vulnerable to HIV infection and less able to cope with the consequences of HIV/AIDS”.

The Department of Housing anticipates that HIV/AIDS will have the following impact on housing demand and housing policy: \textsuperscript{13}

- On the basis of statistics and projections for HIV/AIDS deaths, it can be assumed that there will be a decrease in the demand for housing. Nevertheless, factors such as the use of anti-retroviral medication to prolong patients’ lives, stabilisation of the rate of infection and the fact that not all members of a particular household are infected, indicate that the reduction in demand will not be substantial. Other aspects impacting on housing demand are the incidence of child-headed households and the increase of extended family structures such as grandparents caring for relatives and orphans living with HIV/AIDS.
- Medical expenses and loss of income are likely to influence the affordability of housing. They reduce the ability of households and communities to pay for services, as well as their ability to pay the R2,479 needed, in most instances, to access the housing subsidy scheme.
- The vulnerability of women and children will increase as they are especially susceptible to HIV infection and are often displaced from their homes by ruthless relatives or evicted due to their inability to pay.
- Tenuous tenure situations occur when approved subsidy beneficiaries die before taking registered ownership of their properties, impacting negatively on housing development processes and the security of their households.
- The lack of co-ordination in the housing finance sector between lenders and insurers with regard to the impact of HIV/AIDS impedes the ability of households to access additional finance and consequently motivates a dependence on the housing subsidy.
- High insurance premiums will increase the cost of long-term credit.
- Numerous provincial governments may have to reconsider their focus on the People’s Housing Process and institutional supply systems. The report states: “HIV/AIDS will aggravate the current capacity constraints of delivery agents and will hinder implementation and delivery of housing.”

According to Pillay et al “women are disproportionately affected by HIV/AIDS due to their biological disposition which renders them more susceptible to contracting the virus and women are also the majority of caregivers to people living with HIV/AIDS as well as children orphaned through the disease”.\textsuperscript{14} Other studies show that those who are informally employed hesitate to seek treatment due to high opportunity costs. It is likely that this impact will grow worse in future. The HIV/AIDS epidemic also impacts negatively on women’s housing rights. Ill-health or time spent caring for others diminishes their chances of securing employment and the financial resources to access housing. The Department of Housing’s HIV/AIDS Framework Document\textsuperscript{15} emphasises that interventions must be based within a human rights framework and should be considered holistically and not merely as a medical concern.

Only two of the case studies considered interventions pertaining to, and support for, residents of their projects who were affected by HIV/AIDS. Awareness campaigns, community events and information pamphlets on HIV/AIDS, as well as condom cans in the Carr Gardens project, form part of the JHC community development programme to strengthen communities and enhance social values. Domestic violence is also addressed. Individual counselling and advice on these and other social concerns also receive attention.
An important component of the Sakhasonke Village project was the inclusion of a strategy addressing the needs of people living with HIV/AIDS and their families and preventive measures around contracting the virus. A food garden project is linked to the HIV/AIDS project and aims to assist residents with fresh, inexpensive vegetables, targeting those living with HIV/AIDS, TB and other health risks.

There are some creative alternatives to meeting the needs of vulnerable groups. A co-housing scheme to accommodate households without productive adults, especially for households where the lives of breadwinners have been claimed by HIV/AIDS, was designed by architect and associate professor, Rodney Harber. Co-housing combines a range of ages and household types in dwellings with shared facilities such as kitchens, bathrooms, diningrooms, workshops and other facilities, which create a 'pseudo extended family' as opposed to an institution. The approach encourages a community-based response and in this way, people moving into co-housing are able to maintain their existing social ties and benefit from an extended ‘family’ and social support network. The design consists of very small units backing onto a communal space with limited access, to create a sense of security for households consisting mainly of AIDS orphans and pensioners.

Whiteside argues that freestanding subsidy houses are “entirely inappropriate for sustainability and survival” when it comes to meeting the needs of vulnerable groups and people with special needs. Such a co-housing format could be creatively incorporated into higher-density environments.

3. Children

According to the University of Cape Town’s Children’s Institute home ownership should theoretically provide some financial security and enable the transfer of property, which is a family asset, from one generation to another. However, the law of succession and the passing of title deeds where children who are already living in subsidy housing lose their parents has only recently been addressed.

The Children’s Institute identified two possible areas of need for child-headed households: firstly, attention to mechanisms to enable children’s access to housing if they do not have caregivers; and secondly, assistance with the maintenance of housing.

Ultimately, planning should anticipate the increased need for facilities for children such as schools, clinics, libraries, sporting facilities, transport routes and safe open spaces and the imperative of developing child-friendly cities. Children will benefit if housing is located within reasonable distance from other services. In addition, there should be safe places where children can play and youth can socialise. The prevention of conflict between cars and pedestrians, especially children, needs to receive special design considerations in higher-density housing projects.

The needs of mothers and children living in Sakhasonke Village are met through the provision of a crèche and central play areas. Craft work activities, screen-printing and sporting facilities in the surrounding area contribute to youth development. A crèche also forms an important part of Carr Gardens and the youth have access to facilities in the area. Stock Road has a netball/basketball court but no designated or grassed play areas for children, while in Samora Machel, play areas with equipment were provided as part of semi-private spaces, using the contingency funds which were still available on completion of the project. The N2 Gateway (Phase 1) project paid detailed attention to play areas for children, but neglected the functioning and location of the crèche.

The design of a dwelling is also important from a child’s perspective as space and privacy may decrease the likelihood of domestic violence, abuse and the spread of disease. Residents of case study projects such as Missionvale, Samora Machel and Sakhasonke Village where housing units mostly consist of one bedroom or two bedrooms divided by a partition raised concerns about the lack of privacy and space. Parents felt that they generally do not have privacy from children in terms of their intimate relationship.
4. People with disabilities

A range of disability provisions form part of the existing housing code. The Special Needs Housing Forum recommends that ideally, housing projects should accommodate beneficiaries with special disability needs and equip their units with the appropriate facilities. This usually does not occur to the extent that it could.

Ways of meeting the needs of vulnerable groups living in higher-density housing include:
- setting aside units in new housing projects for group foster families to cope with the increasing number of orphans;
- locating higher-density housing close to transport adapted to the needs of people with disability or illness;
- incorporating a community daycare centre, eliminating the need for institutionalisation and freeing family members to continue employment. The community centre could also function as a space for home-based care workers to increase their effectiveness;
- providing access to capacity and resources such as a range of social support services, support organisations and financial resources like government funding, grants and donor funding;
- securing the assets of remaining spouses/partners and family, especially of child-headed households. Matters such as transfer of property and holding houses in trust for the children for a designated time should receive attention;
- establishing partnerships to ensure that the limited resources and skills available are used effectively and efficiently, and to address the wide range of needs between public sectors, within and across tiers of government, and between the public and private spheres;
- utilising a livelihoods approach including employment creation strategies, community gardening initiatives, soup kitchens and feeding programmes, such as at the Sakhasonke Village project;
- utilising additional subsidies (like the backyard subsidy) to enable households to finance the building of additional rooms or services to households that foster children or care for the sick;
- ensuring that vulnerable groups participate as far as possible in strategies created to address their needs in order to maximise support; and
- making alterations applicable to each category of special needs, such as proper lighting in public areas to increase safety for women and children, incorporating wheelchair ramps, bathroom grab rails and wide corridors for wheelchairs and allocating ground floor and single-storey accommodation to the elderly and disabled.
Guidelines

- There is a wide variety of needs among vulnerable groups, and people with special needs who fall within the lowest income brackets are especially at risk of poverty and destitution. As the number of vulnerable persons grows because of socio-economic conditions, it is becoming increasingly important to consider their needs in planning and implementation of development processes and projects.

- However, a coherent special needs housing policy has not yet been formulated nationally, and current housing policy does not provide mechanisms for organisations to access subsidies for special needs housing.

- Government and implementing agents should take into consideration the range of special needs of residents and should develop appropriate approaches and subsidies to address them, with housing forming one part of an integrated package of services.

- Multi-sectoral approaches should be adopted based on a human rights framework, where public, private, community-based and non-government partnerships are able to co-operate effectively. Policies and resources should not be allocated to meeting only the shelter needs of people with special needs if their other needs are more urgent, or if their other needs result in people being unable to retain the shelter once it is provided.

- The provision of a community and care centre as part of every higher-density housing development is paramount as the focal point of activities and initiatives to help meet the needs of every person in the community, especially those with special needs such as women, children, people affected by HIV/AIDS, the elderly and disabled.
Endnotes

1. Wicht, A 2006
4. Wicht, A 2006
5. Wicht, A 2006
10. Department of Housing, 2003
11. City of Cape Town 2007:4
12. City of Cape Town 2007:4
15. Department of Housing 2003
19. Children’s Institute 2006
22. Department of Housing 2003
23. Wicht, A 2006