

CHAPTER 2



By Dr. Paul Hendler and Lisa Thompson-Smeddle

“A house is a home when it shelters the body and comforts the soul.”

Phillip Moffitt



With the backdrop of definitions listed in Chapter 1, how would one define sustainable housing? The Vernacular Architecture Society of South Africa (VASSA) defines vernacular architecture as, “Building in indigenous styles, constructed from locally available materials, following traditional building practice and patterns, and not architect-designed,” (VASSA. 2008). Though this definition is also applicable to sustainable housing design, there are many other considerations when applying sustainability criterion to housing.

Housing is embedded in a set of natural systems that provide key eco-system services. It is imperative that the relationship between housing and natural systems is understood and taken into account when planning

and building houses and settlements. Daly (1996), for example, emphasizes the difference between growth, defined as an increase in size or quantity (e.g. of populations or resource throughput) and development, defined as qualitative improvement. Growth will ultimately run up against finite limits, since we only have one Earth. William Rees (1996) introduced the notion of humanity's Ecological Footprint, the total land and water area needed to support the global population. Currently, our collective footprint is calculated as nearly 25 per cent greater than the capacity of the biosphere to support us (Heinberg, 2007).

Environmental economist Herman Daly has suggested three conditions for sustainability, focusing on the resource base (Meadows, Meadows and Randers, 2004):

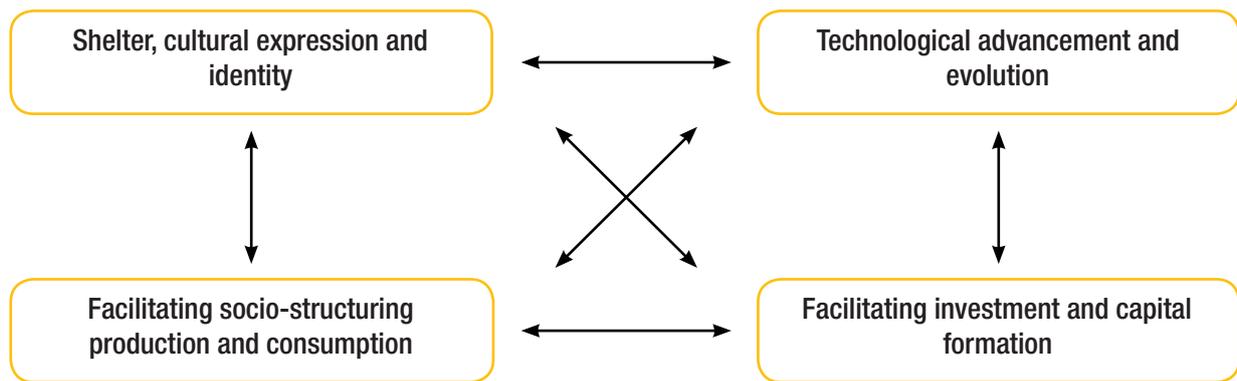
- the rate of use of renewable resources must be less than or equal to their rate of regeneration;
- the rate of use of non-renewable resources must be less than or equal to the rate at which they can be replaced by sustainable renewable resources;
- the rate of pollution emissions must be less than or equal to the rate at which they can be absorbed and processed by the environment.

In terms of the above definition, housing will stand in a sustainable relationship to the natural systems within which they are embedded if their rate of usage of both renewable and non-renewable resources, as well as their rate of waste output, is as expressed above. There are concrete implications arising from this point for:

- the source of energy supplied to households
- the management of household energy demand
- the source of water supplied to households
- the management of water consumption by households
- the disposal and recycling of waste generated by households
- the source of building materials for houses and settlements

The economic and social dimensions of sustainable housing practice have been further articulated by Irurah (Syn-Consult Africa, 2006), who argues that sustainable housing practice also embraces socio-economic empowerment and affirms cultural identity, while recognizing the need for institutional facilitation and resource efficiency. In this view sustainable housing practice:

- balances the technical aspects of constructing housing with the critical need for appropriate, decent and affordable shelter within broader communities and metropolitan areas
- balances the technical aspects of constructing housing with the requisite institutional frameworks for housing delivery
- is delivered in a co-evolutionary process between empowered participants engaging with government, understanding and utilizing appropriate technologies and moving away from the conventional one-size-fits-all approach to housing delivery.



Complexing and co-evolution of built environment, civilisation and development. Source: Irurah (2004).

Economic and social Indicators of sustainable, affordable and social housing are necessary to measure the performance of housing delivery agents against the objectives referred to above. To enable the definition of performance indicators it is useful to view housing as an asset that needs to be valorized, in both its perceived and its economic value; likewise, it is also useful to measure the extent of informed participation by the users of housing in its provision. Defining the indicators for measuring these variables is a process for which there should be a clear starting point. It is argued that the following four conditions of economic and social sustainability of housing should form the point of departure for defining performance indicators¹:

- The long-term economic value of the asset should be more than the total financial, environmental and social liabilities secured by the asset
- The ongoing economic, environmental and social costs of physically maintaining the asset and the necessary services that support its residential function must be affordable to the primary stakeholders, namely the state and the household
- The location, design and live-in security of the asset should reflect perceived value by its market
- Households should demonstrate an understanding of the above three items

Many of the principles discussed above resonate with the innovative housing policy, Breaking New Ground, which will be discussed below.



¹ Formulating indicators that reflect the above four items is a critical task but separate from the objective of the current discussion paper



Traditionally, delivery of housing to middle and upper income housing classes has been left almost entirely to for-profit developers operating via traditional market mechanisms and mortgage-secured financing, while housing for the urban poor has been regarded as a welfare function, directly facilitated by the state. This dualism in housing policy and delivery systems underlies the fact that the housing delivery processes aimed at the needs of the urban poor suffer from severe capacity problems and cannot draw on the resources located in the traditional housing and property markets. This is not sustainable.

In contradistinction to the dualism referred to above, a holistic housing strategy should channel substantial allocations of subsidies via mechanisms that enable access for the poor to established housing and property markets. Following the 1994 White Paper on housing, state policy under Joe Slovo (then national minister of housing) and Billy Cobbett (then director-general in the national department of housing) attempted to achieve the above objective through providing subsidies for developers to deliver houses for the poor, but this was only partially successful.

The root cause of the problem was – and still is - land policy; the poor were settled in economically dead, peripheral zones, where land was cheapest, hence justifying housing that could be affordably covered by the state's capital subsidy. This resulted in mass subsidised housing estates emerging on the urban peripheries, effectively segregated from middle and upper income housing which was better located in relation to urban facilities. This was in direct contradiction to the central principle of sustainable housing for the poor, namely that they should be located within urban spaces where land values are driven by active market forces².

In contrast, the National Department of Housing's Breaking New Ground (BNG) policy emphasises the need to create integrated human settlements. BNG intends for geographical spatial integration of all residential communities and the accompanying necessary social facilities, places of work, etc, through the state intervening in property markets, by making land available at affordable prices and through providing subsidies to affect the structure and outputs of the housing markets. In line with BNG the Cape Town IDP (CCT. 2007), for example, has identified seven strategic areas of focus, one of which is integrated human settlements. The core objectives for integrated human settlements include:

² The reason for the peripheralisation of subsidised housing is that land reform after 1994 was defined purely in terms of "rural land", i.e. the agrarian question, and then allocated to the Department of Agriculture and Land Affairs. Land reform was not applied to the urban context, resulting in the marginalisation of the urban poor to the urban peripheries, despite the obvious dysfunctionalities of locating housing on the urban peripheries relatively far away from work opportunities and social facilities, subsidised as a welfare function with the private sector as implementer. This was the context that prevented the creation of integrated communities (in race and class terms).

- **Improve and develop integrated human settlements through:**
 - transforming dormitory suburbs into areas which support a greater mix of land uses, offer a range of amenities and have socially mixed facilities
 - putting in place policy and spatial planning frameworks that will facilitate the development of integrated human settlements
 - developing and implementing an incremental housing programme
- **Deliver housing opportunities through:**
 - developing new housing opportunities
 - increasing rental stock via social housing partnerships
 - redressing land ownership inequities by providing housing based on restitution claim settlements
 - facilitating gap housing programmes through partnerships with banks and private sector developers
 - developing and maintaining zoned public open spaces, cemeteries, resorts, etc...

While the BNG discourse includes reference to sustainable, integrated human settlements, there is still no specific reference to natural resource usage in relation to the ecosystem goods and services on which settlements depend. The challenge is to interpret the meaning of sustainable resource usage in relation to the sustainability of the natural environment and ecosystems within which housing delivery and human settlement are symbiotically located. Therefore this chapter gives substance and meaning to the “sustainable” part of BNG, by describing the housing-related technologies that enable sustainable resource usage per residential household.



From a sustainable resource use perspective, the historically past and recent housing developments in South Africa's cities were generally undertaken in an extremely unsustainable way - massive urban sprawl and the destruction of potentially productive land, low numbers of housing units per kilometre of infrastructure line (energy, water, sanitation, storm water drainage, roads, rail, etc), rising levels of waste output, increasing levels of energy and material use, etc. Indeed, as the urban poor were located further and further outside of the city, so too did transport subsidies increase (Behrens & Wilkinson. 2003) thus increasing the dependence of the poor on rapidly increasing oil prices. Similarly, no provision was made for the fact that water and energy resources in our cities are facing depletion and infrastructural systems are overloaded.

Many South African metros and municipalities are facing the twin challenge of massively expanding the size of their formal housing stock to meet the needs of the poor, and a simultaneous increase in demand of middle class markets. However, cities must begin to recognise and remain within accepted ecological limits with respect to energy, water, landfill space, sewage disposal, food supplies and biodiversity.

The challenge is to imagine a massive housing programme in South Africa which:

- provides safe, quality, well-located housing for the poor
- complies with densification policies (which may be too moderate)
- utilises a range of new technologies and design features (enforced through bylaws) that massively reduce the average amount of energy, water, materials and use of sinks (landfill space, air space for pollution, emissions, etc) that each house needs over its life cycle
- boldly intervenes in the agricultural food chain to localise food supplies and thus create markets for urban agriculturalists and peri-urban small-scale farmers.



It is critical that sustainable design criterion are followed, and appropriate technologies are used in sustainable settlement roll-outs. Sustainable design criterion should include the following³:

- Thermally efficient design
- Sustainable building materials
- Energy efficiency
- Renewable energy options
- Sustainable water and sanitation systems
- Waste minimisation and recycling

These sustainable resource use interventions should be aligned with the pro-poor approach in BNG, through creating a benchmark that excess consumers must aim to achieve via reduction, and under-consumers (due to poverty/inequality) aim to achieve via access to public goods, subsidies and markets.

In "A Sourcebook of Integrated Ecological Solution," Janis Birkeland explains that present built environment configurations are the result of modern, industrial modes of development, rooted in fossil fuel and non-

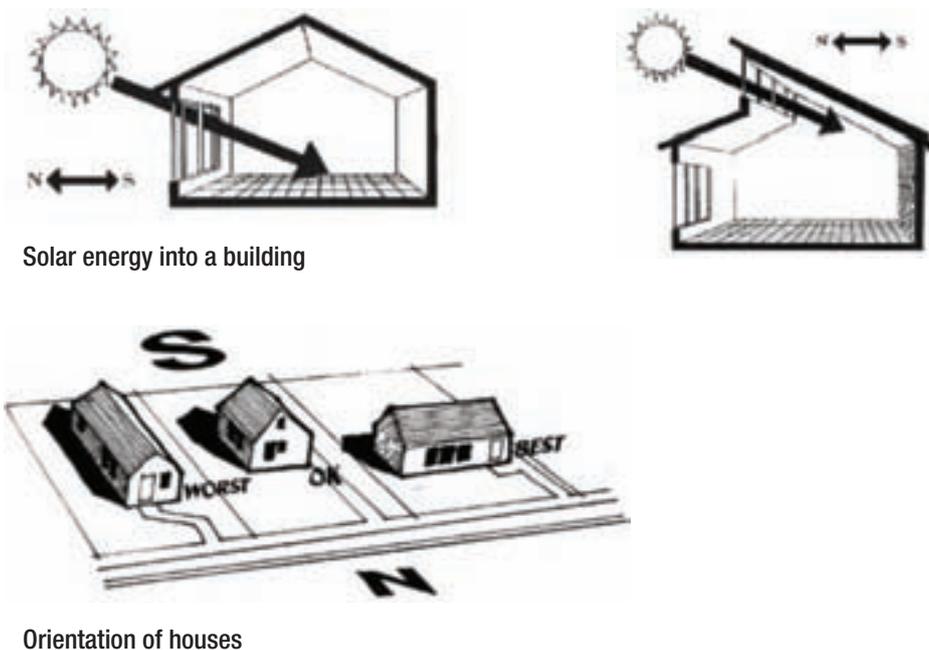
³ Some of these sustainable resource use interventions are discussed in more depth in other chapters and are included here purely to provide a more complete overview.

renewable resource use (Birkeland. 2002). This is inherently unsustainable. With technological interventions that are already available today, Birkeland states that resources and energy consumed by the built environment can be reduced dramatically through ecological design. The following technologies, many of which are no and low-cost, illustrate the creation of housing that is based on sustainable resource usage.

Thermally Efficient Design

Orientation and Placement of Windows

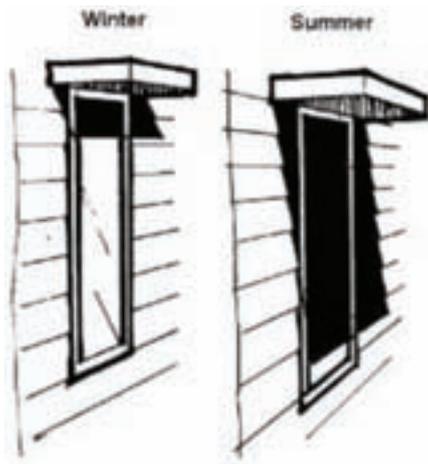
Windows allow solar energy to enter a building (see images below). This is unwanted in summer and desirable in winter. In the southern hemisphere, houses should be orientated to face north (see image below). In general, windows facing the north should be larger (for heat gain during winter) but not too large (increased heat losses in winter and heat gains in summer) while windows facing south should be smaller (to prevent heat losses during winter). The images below illustrate a method of allowing solar rays into the northern side of a house.



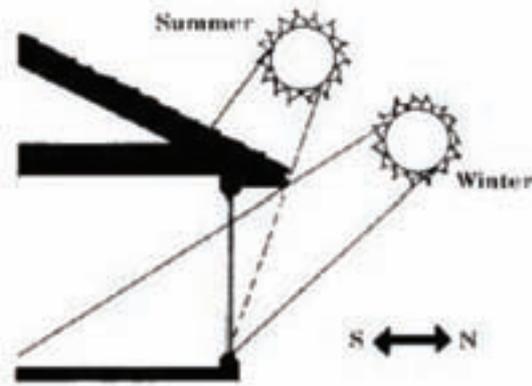
Solar energy into a building

Orientation of houses

The sun changes position in the sky during the year as shown in the image below. By designing an appropriate overhang above the window, the summer sun will be blocked while the winter sun can enter. This is a very cost effective and sustainable way of regulating temperatures within a house or building. An overhang or awning can also be fitted to an existing window.



Window overhangs



Seasonal position of the sun

Appropriate Use of Thermal Mass

Thermal mass is the ability of a material to absorb heat energy. A great portion of heat energy is required to change the temperature of high density materials e.g. concrete, stone, brick and tiles. These materials are therefore considered to have high thermal mass. Lightweight materials such as timber have low thermal mass.

Through the correct application of thermal mass internal temperatures are moderated by averaging the day/night extremes. This increases comfort and reduces energy costs. The ignorant use of thermal mass can exacerbate the worst extremes of the climate and can be a huge energy and comfort liability. To be effective, thermal mass must be integrated with sound passive design techniques. This means having appropriate areas of glazing facing appropriate directions with appropriate levels of shading, insulation and thermal mass.

Effect of thermal mass on building inner air temperatures



Winter

Thermal mass absorbs heat during the day from direct sunlight or other radiant sources. The thermal mass will re-radiate this heat into the home throughout the night.

Summer

During the night, the thermal mass cools down due to low night temperatures. This could be enhanced through cool night breezes and/or convection currents to pass over the thermal mass. During the day the low temperature thermal mass keeps the inside of the building cool by absorbing energy from the room.

The appropriate use of thermal mass can delay heat flow through the building envelope by as much as 10 to 12 hours producing a warmer house at night in winter and a cooler house during the day in summer. Building materials with high thermal mass include adobe brick, stone, brick, etc. Please see the sustainable building materials chapter for further information.

Sustainable Building Materials ⁴

According to the Western Cape Human Settlement Strategy, building construction and operation results in 50% of all CO₂ emissions worldwide (Department of Local Government and Housing. 2007). The average middle income house uses five to ten tons of cement in the building process, and for every ton of cement manufactured, a ton of CO₂ is released.

Thermally efficient, low carbon emission, structurally sound and inexpensive building materials exist that have been used for centuries in household design. Hemp has huge potential in the building market, as do adobe, sand bag construction, cob, thatch, brick, stone and recycled materials. Other 'low cement' options, including SABS approved compressed earth blocks (CEBs) are currently being investigated and proposed in sustainable neighbourhood designs.

Energy Efficiency Applications

A recent study from the Energy Research Centre (University of Cape Town) states that energy efficiency in social housing is an area where a policy of direct state financial support to promote energy efficiency seems warranted. In practice, municipal government would need to play an important role in administering a subsidy scheme and providing bridging finance. (Winkler et al. 2002). Some of the most common, cost effective energy efficiency applications are listed below.

Ceilings

The benefits associated with ceiling installations include a reduction in expenditure on indoor heating, improved health as a result of improved air quality and more stable internal air temperatures (particularly in households which use paraffin, coal and other heating systems which damage respiratory health), increased productivity resulting from improved health and increased quality of life.

Heat loss through the roof is often greater than heat loss in other areas of the house, thus one of the most effective ways to insulate a house is to put in a ceiling. In cold climactic regions, or regions with cold winters, a ceiling can reduce space heating costs by up to 50 per cent. The department of housing's Draft Framework on Environmentally Efficient Housing has identified ceilings as an important intervention within social housing frameworks.

Ekurhuleni has a target goal of 100 per cent installed ceilings in households by 2020 (SEA. 2007). According to Sustainable Energy Africa, "if Ekurhuleni achieves its targets by 2024, 550 thousand MWh of electricity

⁴ Sustainable building materials are discussed further in Chapter 3

will have been saved. In power station capacity terms, in 2024, it will negate the need for an 8MW facility (including transmission line losses and a reserve capacity of 30 per cent), which is slightly more than the Darling Wind Farm produces.” SEA also suggests that over 380 thousand tonnes of CO₂ will be saved by 2024 if this strategy is implemented.

Insulation

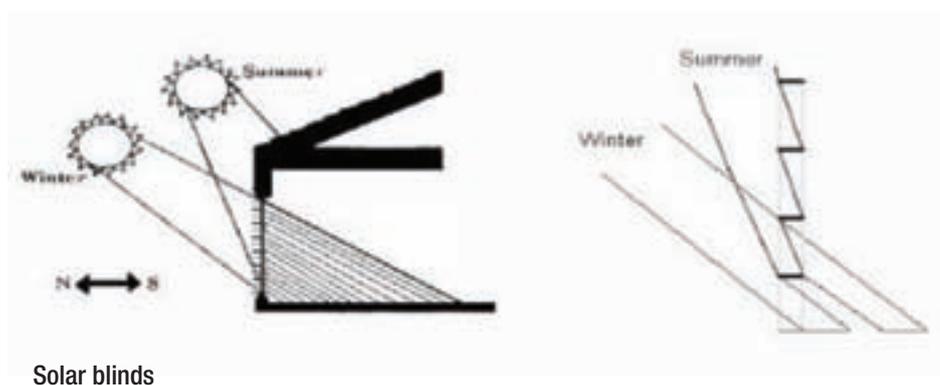
One of the best ways to make a house more energy efficient is to reduce the flow of heat into and out of the house. Ceiling and roof insulation serve to conserve heat in winter, and maintain cooler temperatures in summer. Climactic regions can make a difference in the level of insulation necessary for a comfortable living environment within a home. In mild climates like the Western Cape, comfort can be achieved without much heating or cooling, if appropriate thermal designs are implemented.

Sky Lights

A skylight is a window placed in the roof of a building or in the ceiling of a room to admit light into the room. Designs include transparent roof plates, glass windows and plastic domes with circular ducts connected to the room. Skylights should ideally be incorporated in the building design to keep the costs down, but can be retrofitted to existing buildings with significant contributions to increased light levels and accompanied energy savings.

Solar Blinds

When an existing building does not have an appropriate overhang, a solar blind can be fitted (see image below). These blinds block all the summer sun and let the majority of winter sun through. These fixed blinds let sun light through and do not block the view since they are horizontal and are never closed or adjusted. They can be manufactured locally and are cost effective.



CFL Bulbs

The use of energy efficient lighting is one of the best and most cost effective ways of reducing energy consumption. Efficient lighting will reduce energy consumption and in particular peak demand, which will improve energy security, Eskom also recognizes that efficient lighting will play a major role in its demand side management (DSM) process.

CFL statistics (SEA. 2007):

- CFLS use five times less energy than an equivalent incandescent bulb
- CFLs are expected to last 10 times longer than incandescent bulbs
- Life cycle analysis' reveal that the capital cost of a CFL (approximately R18) is nearly half that of 10 incandescent bulbs (approximately R30).
- A CFL is 80% more efficient than an incandescent bulb, which means that 1/5th the power is used over the lifetime of one 18W CFL (the equivalent of a 100W incandescent)
- Approximately 10 000 hours can be saved (a saving of 800kWhrs of electricity that amounts to R300 of electricity saved per CFL using today's rates).
- Approximately 800kg of CO₂ will be saved over the lifetime of one CFL compared to the equivalent incandescent
- Improved quality of life can be achieved through a reduction in electricity costs for a low income household where the proportion of energy costs to income is very high.

Renewable energy applications

Solar Water Heaters (SWH) ⁵

Lack of access to hot water can have negative safety and health impacts on low income households. SWHs can replace the use of "dirtier" fuels such as paraffin for water heating. Also, the time lost in heating water by using more 'traditional' fuels, such as wood, could be saved by using solar water heaters. SWHs in the low income sector should become a stronger focus. It should be noted that good quality, small (55litre) solar water heaters are available for under R3000 fully installed. These systems can be financially viable, even without being subsidized. Solar water heating technologies are dealt with in detail in the Energy chapter.

Sustainable water and sanitation systems ⁶

Water efficiency measures can include low flow fixtures in sinks and showers, dual flush systems in toilets, rain water harvesting and water recycling. Dry or urine diversion (UD) toilets can also reduce water consumption in households by approximately 40 per cent. UD toilets also produce compost, which can be used in agricultural production. Grey water recycling in settlements can be inexpensive and can provide nutrients for agricultural production and greening. On-site sewage systems such as vertically integrated wetlands, membrane filtration systems, biolytix systems and biogas digestors can provide nutrients for agriculture, recycled water for toilet flushing and energy for household use.

Waste Minimisation and Recycling ⁷

Waste separation and recycling can generate jobs as well as removing recyclable resources from landfill. Individuals and recycling cooperatives can collect and separate wastes and sell recyclable materials. Buy-back centres can be established in neighbourhoods, where recyclers can buy recyclable materials for re-processing. Organic materials can also be separated and made into compost, adding nutrients to soil for agricultural production and greening.

⁵ Solar heating and other renewable application are discussed in further detail in Chapter 4

⁶ Sustainable water and sanitation systems are addressed more fully in Chapter 6

⁷ Waste minimisation and recycling are unpacked in Chapter 5



There are at least six housing delivery mechanisms that have emerged in South Africa since the early 1990s, and which are more or less aligned with, or can be used within the context of national and provincial housing policies. This section examines how these mechanisms might address the prevalent housing shortage. Linked to and underpinning the sustainability of housing delivery mechanisms is the crucial factor of housing finance. This necessitates a short overview of the funds and finance available for various forms of housing delivery, as well as the public private relationships involved in implementing housing projects.

The foregoing lays the basis for thinking about new ways to deliver subsidized and affordable housing. The current flexible and open-ended public housing framework should be exploited to maximize the provision of the most appropriate housing to the poor, and housing which is affordable for them. Too often, however, housing authorities think strictly in terms of the penalties if they should fall foul of the Municipal Finance Management Act (MFMA) and its regulations, and this leads to a bureaucratic approach to housing delivery where officials strive to avoid risk rather than explore opportunities opened up by the MFMA.

Incremental Formal Housing

There are many poor people in South Africa who have constructed their own informal dwellings. These structures are typically referred to as shacks, and the response of the authorities has often been to engage in shack clearance. However a different, incremental approach to informal structures should be adopted which acknowledges that the poor currently settled illegally, have invested in housing and this housing represents a locator that can be built on. Incremental building facilitates the transformation of informal structures into acceptable formal houses over time. The location of the shacks is critical in determining the success of this mechanism, for if these structures are erected in flood plains, for example, they would not be sustainable. Likewise, the extent of community coherence is also critical in determining the active involvement of the shack dwellers in improving their housing – in this regard older, more established settlements could be expected to provide a more facilitative environment.

A critical starting point is the provision of handing title of stands over to individuals – usually heads of households. Providing proper infrastructure is also critical. Notwithstanding the legal and regularization process required, in-situ upgrading is possible through public financed and procured infrastructure, and this is already happening at scale in certain cities.

Infrastructure provides a developmental platform on the basis of which individual households can be assisted with credit, building materials and technical assistance, to improve and formalise their structures. Local governments are positioned to play a key-facilitating role to enable the provision of these services to the residents of informal structures.

During the process some of the existing home owners might move to other housing projects that better suited their needs, e.g. green fields, social housing, etc. Over time with ownership, neighbourhood improvement should result in the houses becoming tradable assets. This will be the point at which a functioning housing market will have been established in what were previously regarded as “shack settlements”.

In implementing incremental formal housing care should be taken to establish the rules of engagement by the dwellers of informal settlements in the formalisation process. The risk is that such projects could attract more informal settlers and result in urban sprawl rather than the goal of contained, densified housing, which is increasingly being recognized as not only a building block of a compact city but also a precondition for sustainable urban life under conditions of rising transportation, fuel and other costs, which create a general inflationary spiral. In this regard the coherence of existing community structures will be a key factor in stabilising existing informal settlements through a process of incremental formal housing⁷. Incremental implementation is part and parcel of the BNG approach to housing policy.



⁷ From 2009 the Treasury will provide municipalities with funding from the central fuel fund specifically for investing in infrastructure, the amounts of which will be in proportion to fuel sales in areas of municipal jurisdiction; in addition, for municipalities that have a demonstrable pro-poor infrastructure strategy, the Treasury will also provide additional funding, matched Rand for Rand with the proportionate funding from the fuel fund (Hendler. 2008a).

Subsidised Housing

Over one million subsidised units were delivered between 1994 and 2004 across South Africa, which is probably a world record for quantitative outputs. According to Haskins (2008) some 34 720 affordable housing units were delivered in the City of Cape Town between 2001 and 2007, and most of the units delivered were likely to have been subsidised units. However, the backlog expanded from 240 000 to 350 000. Criticised for being an unsustainable form of housing, the subsidy mechanism is not the major purveyor of affordable housing that it was some years ago. Nevertheless there are probably still many subsidies in the pipeline for housing units still to be built, and given the time that it takes to create alternative programmes it might be prudent to use the subsidy mechanism but in a modified form to address some of its critical weaknesses from a sustainability perspective.

A modified version of subsidised design could be incorporated as a delivery mechanism within a sustainable settlement delivery strategy. Through the investment of public funds from the Municipal Infrastructure Grant (MIG) and other programmes of the Treasury infrastructure could be installed. Through the current capital subsidy programme a defined number of units can be developed that must be integrated with existing settlements and council owned land. These subsidised units can be laid out in denser formats, e.g. as cluster housing, to minimise sprawl and enable more effective use of available land. In a cluster arrangement houses are not laid out within planned grids, but rather clustered closer to each other.

However, subsidised units are not altogether popular with many of the beneficiaries for whom they are targeted. They are small, shell houses that offer very little privacy to individuals, and it has been argued that they are inadequate⁹. Many social ills experienced in low income communities can be linked to inadequate housing units. In houses without room partitions, children are often exposed to sexual activity at a young age. The placement of subsidy houses in peripheral locations forces parents to spend excessive amounts of time and unavailable money on commuting rather than actively looking after their children. Lack of proper ventilation and overcrowding in these units creates an environment where disease can easily spread, and inefficient design increases family expenditure on space and water heating. The high costs of transport, paraffin and increasing food prices prevent many low income families from being able to afford payments for water and electricity, creating debt cycles within city finance streams. Community members without an income add backyard shacks in order to generate an income and this perpetuates the vicious cycle.

In the next section, social, communal, gap, rental and employer housing will be discussed, as they form part of a broad range of housing options for mixed income neighbourhoods settings.

Social Housing

Government policy facilitated the emergence of social housing as a delivery mechanism that enables a choice for alternative forms of tenure in addition to outright ownership – like rental, rent-to-buy, co-operative housing and installment sale. Government provides subsidies to accredited social housing institutions (SHIs) that also raise loans to purchase and refurbish existing buildings, or to start new developments. These institutional subsidies are available for medium to high density social housing units. Recently the social

⁹ This point of view emerged strongly during workshops, facilitated by the author, with housing NGOs, farmers and farm workers from the Stellenbosch municipal area. This view is however more pervasive, and is not confined to these groups from this municipal area.

housing restructuring grant became available for SHIs operating in so-called restructuring zones – this has significantly increased the quantum of public capital available for social housing units to about R170 000 per unit.

The SHIs task is to effectively manage the properties to ensure decent and affordable housing for the sector of the population earning between R2 000 and R7 500 per month. Both public and private institutions (including non-profit companies) can manage and maintain such stock. Since 1994 a social housing sector has emerged in the South African housing market, that to date manages approximately 75 000 accommodation units.

Arguably the first SHI in South Africa, the Citizens Housing League – now Communicare – is located in Cape Town and run as a non-profit company. The City has entered into partnerships with Communicare and also with the Social Housing Company (Sohco) (another non-profit company) and the Cape Town Community Housing Company, in which the City is a 50 per cent shareholder with the National Housing Finance Corporation (NHFC). The terms of these partnerships are that the City will give these three companies preferential access to municipal land and institutional subsidies in return for their providing social housing units at scale. To date Communicare has delivered the most rental units, but only recently entered the market for black working class lessees; Sohco recently entered the Cape Town market and their performance there is unknown to the author – they have a track record in Durban and East London; and, CTCHC have been dogged by problems relating to rent defaulting.

The most popular form of tenure in social housing is rental. In addition to the institutional subsidies and restructuring grants, the Community Rental Units (CRU) subsidy¹⁰, which provides more value per square meter than the conventional institutional housing subsidy. This subsidy is aimed at state-owned properties housing people earning below R3 000 per month, and could facilitate the accommodation of people exiting from the communal/transitional housing programme (see below).

Communal/Transitional Housing

Communal and transitional housing is a form of social housing targeted at households earning less than R2 000 per month, including the unemployed. A very high number of these households lack meaningful income-generating work. Accordingly, this mechanism should be highly relevant to contributing to a sustainable housing process.

“Communal” refers to the fact that the cooking and cleaning (ablution) facilities are all shared within a single building or project, and “transitional” refers to the fact that accommodation is only provided for a limited period (say one year) after which an individual or household is expected to assume responsibility for seeking their own accommodation on the housing market, either through private market or social housing delivery mechanisms. Communal/transitional housing has been implemented in larger cities where transformed inner city buildings have provided accommodation for the poor or destitute. A particular housing institution in the Johannesburg inner city¹¹ has developed a unique service that includes occupational training and/or

¹⁰ CRU subsidies provide the best value of public funding per square meter of residential property. The conditions for this subsidy are: (1) the property is state-owned and may not be alienated; (2) the occupants earn less than R3 000 per month; and, (3) the tenure is rental in perpetuity. Property management can be outsourced to a SHI (SHF, 2006; Hendler, 2008b).

¹¹ Madulomoho Housing, which together with MES Aksie, a faith-based social service group, provides a package of services including occupational training job placing and monitoring. page 21

counseling, assisting residents to find employment and monitoring their employment history to facilitate sustainable income generation.

Formalised Home Ownership (Mortgaged Property) (Gap housing)

This is the established delivery mechanism for private, outright ownership. Commercial banks can fund this effectively, and private developers manage the process of acquiring and servicing the land, constructing the houses and transferring of title to new owners. It is assumed that this delivery mechanism would address the needs of many households in overcrowded formal housing units, and probably some who reside in informal structures due to a shortage of formal units available in the housing market rather than financial constraints.

Nevertheless, given the rapid increase in the value of all housing properties in recent years, including those in previously segregated black townships (which also experienced the housing “boom”); the challenge is to make land available at an affordable price to enable entry to the ownership market for those currently excluded through high prices. In some instances this might necessitate the land being made available at no charge.

Private Rental Market

Private high, medium and low-density units can be brought onto the market for rental under normal market conditions. However, the rental market in low income areas can often be anything but “normal”. There are many cases of inadequately maintained stock, rent defaulting and the hijacking of units and entire blocks by gangs of criminals. Tenant management and rent collection can be a big problem. The precise role of the municipality and the partnered SHIs would have to be examined and thought through carefully if outsourcing of these critical property management functions is to succeed.

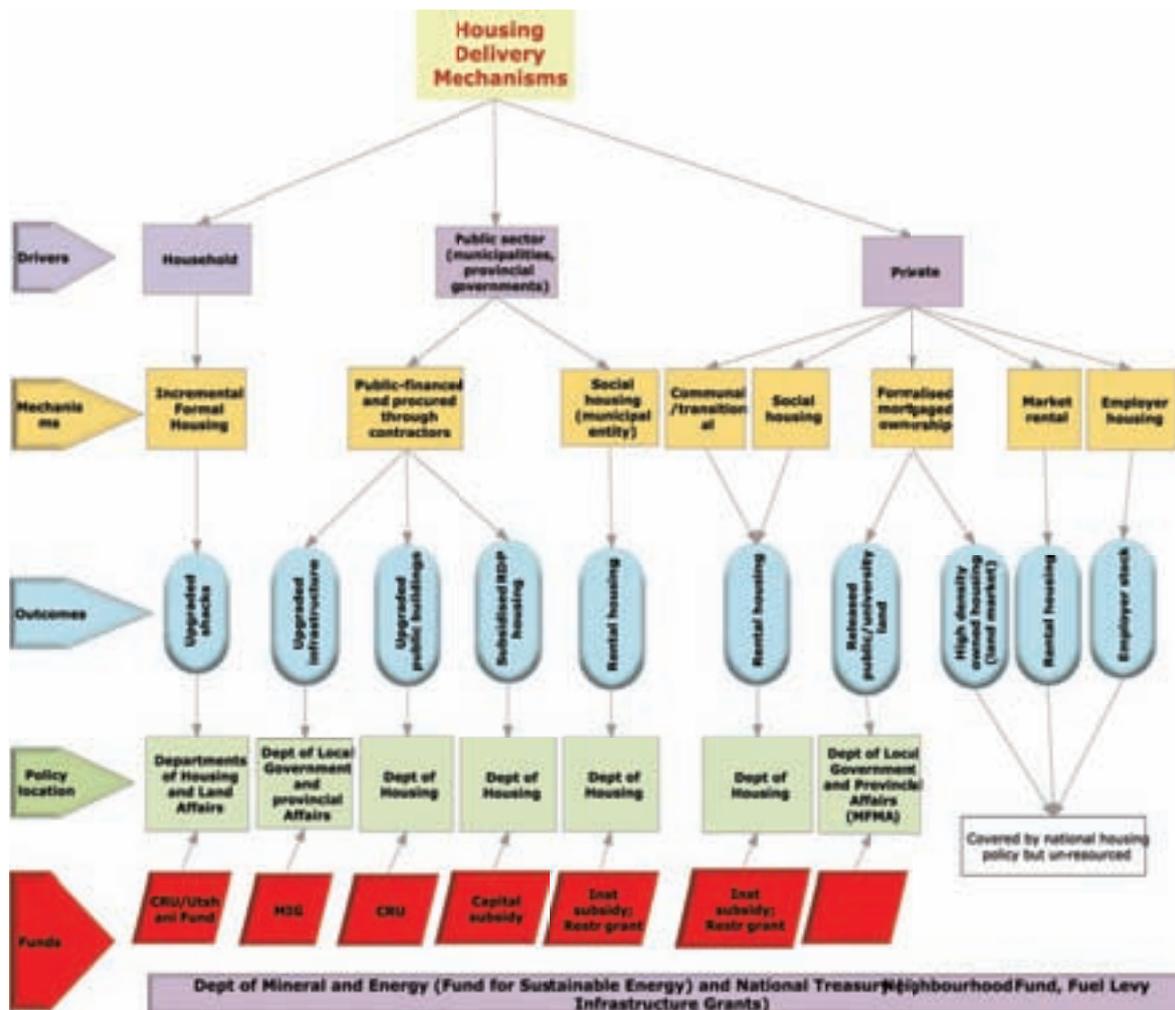
The providers of private rented accommodation are often private landowners who rent their units to tenants. In many cases in existing townships these landlords live on the same properties and rent out structures in their backyards. What is required here is a flexible application of municipal by-laws so that health and safety can be ensured without negatively impacting on the affordable private rental market through increasing the costs of compliance.

Employer Housing

In line with international trends by businesses to focus on core functions and outsource peripheral functions, businesses in South African have tended to avoid getting involved in securing housing for their employees. At best businesses tend to provide financial support in the form of guarantees and sometimes even loans; but the trend is to provide a “clean wage” that assumes the employee can look after the financing of housing themselves.

In the past, large employers of labour, such as mines and parastatals, provided accommodation directly to their employees because it secured a stable, constant supply of labour. Currently, with the high potential

for civil unrest (like the recent outbreaks of xenophobia) prompted partly by completely inadequate living conditions suffered by many people, employers should have an interest in getting more directly involved in their employees' housing to ensure greater social stability within which to do their business. This would require a champion, probably the mayor, to articulate the need for a "coalition of the willing", led by the municipality but should also include critical components of the business community, to pursue a developmental agenda in sustainable housing. The delivery mechanisms are depicted graphically below.



Funding Interventions

The Municipality will need to attract the following role players to projects:

- Institutional Investors (e.g. Sanlam or Old Mutual)
- Banks
- International donor and aid organizations
- Development finance institutions
- Local industry players
- Municipal guarantee instruments

- Packaged and prioritised infrastructure financing from organisations like the National Treasury, the Development Bank of Southern Africa (DBSA) and the municipal infrastructure grant (MIG)
- National subsidy funds specifically targeted at housing

Funding Mechanisms

Funding mechanisms for housing should include public-private-partnerships (PPPs) which are relatively novel in South Africa, where municipalities have traditionally regulated residential (and non-residential) development by the private sector in terms of planning by-laws and building regulations. They did not, however, take any initiative in shaping the type of developments that would be appropriate and sustainable for the majority of the population living in their jurisdictions.

The conventional approach is for each municipal department to vet a development application, linearly, which can take up to 24 months. Conventionally departments operate in silos, in isolation from, and at times competing with one another. These are serious obstacles, undermining sustainable development.

Municipalities should be driving development through a dedicated structure that includes officials from all key departments, relevant councilors as well as outside specialists, all of whom should write the broad development criteria that would be advertised through Requests for Proposals (RfPs) to the private sector. The details of the development would form part of the private sector bids that they would submit in order to compete for participation in the development. Indicator systems like the CSIRs Sustainable Building Assessment Tool (SBAT) would be useful in providing an overarching set of planning, design and assessment criterion for settlements.

The following are the funding and/or contracting mechanisms that municipalities can employ where appropriate to attract and enlist the services of the successful private sector bidders, and to fast track delivery of housing. A special contract could make provision for community-based organizations (CBOs) to participate in PPPs – this would be a unique contribution to the PPP practice as it has been carried out until now in South Africa, by creating a stake in development for authentic, grassroots-based organizations that can demonstrate that they represent a significant constituency.

Service contract

A service contract is an agreement in terms of which the private sector contributes towards specific services, either by undertaking upstream services that flow into the municipality's or SHI's service, or by providing these services directly to the customers themselves. In its simplest form the service contract would entail the outsourcing of a defined service within the housing value chain to the private sector.

Management contract

A management contract would be an agreement in terms of property management whereby the private contractor will manage the public residential property portfolio, including (but not necessarily limited to)

property maintenance, rent collection, accounts management, invoicing, payments and security. The management contract is applied to a more complex set of services and functions that can be contracted to a private party with specific performance requirements attached to a fee. An example could be the management of all rental stock to a private institution for a fee.

Leasing contract

A leasing contract is an agreement in terms of which the private contractor will lease and manage the entire residential property portfolio/property assets of the municipality or another public authority. Under this arrangement the municipality could use a longer-term lease over 10 to 50 years to procure public goods such as block of rental flats. The municipality will lease the land and the private sector will raise the capital to build and manage stock until the lease expires. Upon termination of the lease the state has options it could exercise.

Investment linked contract (Concession)

A concession is an agreement in terms of which the private contractor will invest in the public residential facility (which could either be new-build or existing structures) by adding value through refurbishment, additions and alterations and/or conversions, manage and/or undertake the construction, operate the facility over the medium to long term and then transfer the facility back to the state's control. Under this agreement a public-private partnership arrangement is necessary. In this case the state continues to hold the fundamental right to provide the service; however, the state contracts the right to operate service and make improvements, to the private sector. The private sector operator will have contracted to provide a service and collect revenues for a defined period of years. The risk of funding is exclusively in the hands of the private sector. The role of the state is to monitor and regulate. At the end of the term the services and the assets created revert to the state.



Corporatization / Joint Venture

This is a contract in terms of which the state gives up limited equity to a private contractor in return for one (or a combination) of practical involvements (i.e. from servicing to direct investment). The municipality is able to structure a unique entity by itself or with the private sector. Under this approach defined roles and contributions are agreed and the institution implements under a specific mandate. This vehicle could fast track delivery through its narrow and focused mandate. Examples of this could include the establishment of an investment promotion agency, a housing development fund or a development agency that can implement this strategy for a defined period on a partnership basis.

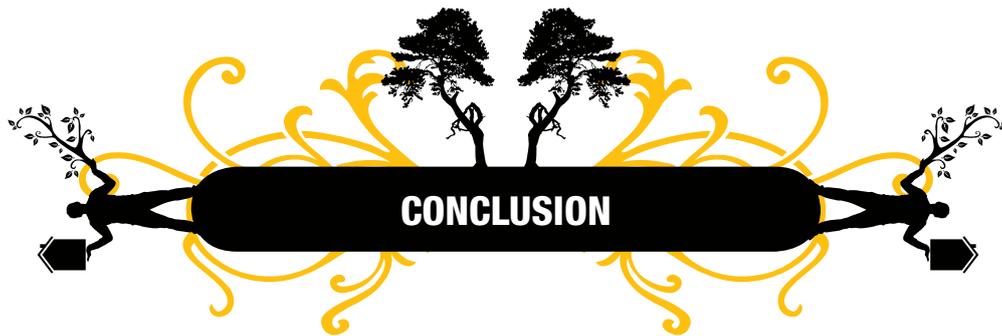
Private ownership and operation

In this scenario there is a contract in terms of which the state sells all the equity to the private contractor subject to specified usage and trading conditions for the residential facility. The sale of equity can be phased. In this option the municipality can opt to alienate land to the private sector for development of residential property in the rental and ownership segments of the market.

Community-based non-profit/cooperative institutions

A “community ownership” option, which will form a critical component of a development coalition, rests on collective savings to generate individual and collective equity that could leverage further public and private funds. A pertinent example of this is the savings clubs approach of the Federation of the Urban Poor (FEDUP). This option does not stand alone: it can interface with most of the other public and private relationships referred to above. “Community ownership” means that participants contribute equity which means they also take risk and therefore contribute to the protection of the asset and its continuous improvement. Furthermore, “community ownership” builds bonds of solidarity and reciprocity in the community resulting in a greater sense of community which, in turn, often translates into more reliable repayments, higher levels of ongoing investment in individual and collective assets, and reduced levels of conflict, violence and crime. The institutional arrangements can range from simply savings groups to mobilise community equity and investment, through to housing associations and even housing cooperatives.





It is imperative that councilors, municipal officials and their contractual agents adopt a new way of recognizing opportunities for residential development, in partnership with the private sector and community-based organizations. To enable a new approach to be put into practice may require the establishment of municipal-wide structures, with Mayoral authority, the task of which will be to expedite development by writing the terms of reference and clearing bureaucratic blockages as and when these arise. Council and municipal executives will also need to adopt clear policies on development facilitation, and educate municipal officials in the vision and goals of these policies in order to expedite and facilitate sustainable residential development.

