# PART C : IMPLEMENTATION

## CHAPTER 10     IMPROVEMENT PROJECTS : TECHNICAL GUIDELINES

## 10.1  PARTICIPATIVE PLANNING AND DESIGN

### 10.1.1 The process

The essence of participative planning is to include all affected parties, especially the community, in every step of the process, as indicated below:

- Meeting with the affected community at the beginning of the process. At this meeting aerial photograph base plans are presented, the opportunities for upgrading discussed, and the process for conducting the socio-economic survey and needs analysis described. A project steering committee should be chosen by the community from this meeting. The project steering committee can also become the basis of the allocation committee;

- A series of workshops with the project steering committee at key milestones through the design process. These can take the form of intensive planning days or weekends. At the end of these sessions mass report back meetings can be held to explain progress. Sessions should cover topics such as road and path network, communal service points, community facilities, open space and recreational areas, relocation requirements and procedures, and others, as appropriate;

- The planning process is completed with a final meeting at which the steps to be taken in actual project implementation are discussed and agreed upon prior to handing the project over to the implementation team.

## 10.1.2 Principles for effective participative planning

Application of the following principles promotes effective participative planning:

### 10.1.2.1 Visual aids

While the participant community will have an intimate knowledge of the site and certain members may have well developed ideas on how things can be improved they may not to be acquainted with conventional drawing and planning conventions.

Therefore it is helpful to make use of visual aids. The need for a base plan based on an aerial photograph, which should be in colour, has already been described (see 4.2). Photographs of various scenes within the settlement should be used as well as models and perspective drawings where appropriate. Where possible community members should be involved in making models and taking photographs themselves.

### 10.1.2.2 Ground to drawing board

In conventional planning and design processes a base plan is produced and then initial concept designs produced on a drawing board. Apart from some field checks the entire process occurs on the drawing board. Plans produced are used for tender purposes and only then does the operation move into the field for the construction phase. This is known as the "drawing board to ground" approach.

However, in-situ upgrade processes, for example, should occur the other way round. Most of the base plan is effectively already complete in that the informal dwellings are already in place, streets can be walked and discussions about where infrastructure etc, should be placed, can be held on-site (*in-situ)*. Once this initial process is complete then the information can be placed on the base plans and the drawings marked up accordingly.

### 10.1.2.3 First principles

A number of basic components must be incorporated into the plan as it is developed from first principles. These include:

**Site sizes and basic shapes**

A minimum sub-division size must be decided on. This would depend upon the type of project, but should not be less than 50m$^2$ although 80 m$^2$ may be considered more appropriate. Sites should also be identified for important

community activities - schools, churches, public open space, transport interchanges and markets, etc. Many activities, particularly businesses, are likely to be conducted from dwellings and the need for dedicated business sites may be limited. Many churches and creches operate from residential sites, and their land requirements should be born in mind. In an in situ upgrade the shapes of plots will largely be determined by the existing situation.

### Vehicular access

A policy toward vehicular access should be decided. It is unlikely that every plot should have to accommodate a parking bay or even that every access route be wide enough to accommodate cars. However, it should be possible for a pedestrian path to reach every dwelling. This path can coincide with a services right-of-way. It will also be mandatory that a fire engine can get to within hose-length of every dwelling. This will vary from local authority to local authority but will range from between 50 to 90 meters. The vehicular access road network must also accommodate arrangements for refuse removal and emergency vehicles.

### Service levels

Service levels must be agreed upon (see 10.4). In the first instance these should comply with the statutory minimums. For example, there should be access to water within 200 meters of every dwelling in terms of the Water Act. It may be possible that higher first phase standards can be achieved depending on the resources available but these are unlikely to stretch to full individual services. Communal service centres are likely to provide an interim solution. These can form service hubs to which individual services can be connected at a later date.

### Construction and Maintenance requirements

Space required for services construction and maintenance must also be provided in the planning layout. This is especially critical due to some of the tight corners experienced in the layout of informal settlements (see 10.5 & 10.6)

### Housing options

Any upgrading of plots and services must take into account what future housing options are likely to be. These can range from a gradual upgrading of existing structures by replacing temporary building materials with permanent or by immediately replacing the existing structures with new ones. An integrated design approach is required that ensures that service upgrades are compatible with proposed house types (see 10.6).

### Tenure

Thought must be given to the type of tenure provided (see 10.2), and the implications must be built into the planning process

### 10.1.3 Enabling effective community consultation

It is essential that the input of the community representatives on the project steering committee is not constrained by their own, possibly limited, experience of what options exist. Their experience should be broadened by meeting with representatives and visiting other projects.

To broaden the experience of poor people engaged in housing programs the People' Dialogue and the SA Homeless People's Federation have been arranging exchanges between poor people's housing movements in the sub-continent as well as in South America, India and the Far East. The experience of these programs can be drawn on by contacting these organizations which have offices in Cape Town.

## 10.2 TENURE POLICY AND ADMINISTRATION

### 10.2.1 Informal Tenure

Informal tenure exists in most informal settlements before tenure upgrading takes place. It is whereby people occupy land without any documented tenure rights, but still have certain rights in practice and in terms of legislation. For example, residents of informal settlements can have rights in terms of legislation such as the Prevention of Illegal Eviction From and Unlawful Occupation of Land Act of 1998 and the Extension of Security of Tenure Act of 1997 (see 1.5.2.6 and 1.5.4).

Informal settlements are often seen by residents as being a combination of "rural" or "customary" and individualised processes. Informal tenure is to some extent derived from rural tenure rules modified for urban conditions. Some of the typical characteristics of urban informal settlement tenure are:

- Newcomers must be sponsored and undergo a period of probation before being allocated land.
- Residents must adhere to accepted community standards of behaviour to belong.
- Individual land rights are subject to higher overall community rights.

Typical ways in which shacks or "sites" in informal settlements are exchanged are by gaining the permission of the local civic association committee or community leader, or by "purchasing" a shack from the previous owner.

Informal tenure may provide very little legal security, and cannot easily be monitored or controlled by a local authority control. For some households, however, something similar to informal tenure may be a preferred option, due to

affordability constraints, an unwillingness to be tied down to a particular location and/or because life in an informal settlement may suit them in some way (in terms of their livelihood or social networks).

### 10.2.2 Tenure Upgrading

Tenure upgrading is the process of converting undocumented informal land tenure rights into formal, legally secure tenure rights.

Typical motivations for the upgrading of tenure, usually through the provision of ownership, are:

- To remove possibility of arbitrary eviction.
- To provide households with an asset which can be used as security for credit.
- To provide a foothold in the housing market through a tradeable asset.
- To provide space for home based economic activities.
- To foster better living conditions, a better environment and to improve personal security.
- To provide the conditions for the development of communities, as residents have a sense of ownership.
- To enable greater social control by authorities.
- To be able to identify and charge service users.
- To encourage greater household investment in housing.

All of these benefits are generally realised in practice apart from those of using property as security for credit and having a tradeable asset. The reality is that it is extremely unlikely that properties owned by low-income people could be used as collateral for mortgage loans. Mortgage loans are unsuitable credit mechanisms for low-income people in any event because of the long repayment periods and risk of losing the property in the case of inability to meet payments. As a result, properties in upgraded informal settlements and new low-income housing projects are likely to have relatively low market values, and a properly functioning market for new subsidised housing has not yet developed.

### 10.2.3 Tenure upgrading processes

Community involvement in the decision making processes on the upgrading of tenure rights, as part of participation in broader planning of the upgrading process (see Section 10.2), is essential. This includes:
What form of tenure to provide to whom
Which households to provide tenure to
Spatial allocation of tenure rights
Who within the household to provide tenure to

It is important to note that changing the informal tenure system can be highly contentious, as often the granting of permission to settle in informal settlements is a source of power for community leaders and there may also be people who collect rent from residents of the settlement. Tenure upgrading therefore has to be linked to democratisation and establishment of a representative and accountable community organisation (see Chapter 3 and 7.3).

As part of *in situ* upgrading processes, residents need to play a key role in determining where plot boundaries should go and whether any households require relocation. Wherever possible tenure rights should be allocated to both the household head and the spouse or partner. Co-owners would have right of veto, which would greatly complicate land transactions but would increase the security of other members of the household. The rights of, for example, long-term tenants or members of the extended family or vulnerable household members such as the aged or people with HIV/AIDS, could also be protected by registering lifetime right of use (*usufruct*) on the title deed.

It is important to realize that some people will benefit and some will potentially lose out in a process of tenure upgrading. Those who would often not benefit include the most vulnerable households (tenants, newly arrived households, single people and women headed households) and people engaged in economic activities that rely upon informality. It is essential that vulnerable groups be involved in decision making and that their needs are adequately taken into account in the tenure upgrading process.


## 10.2.4 Tenure education

During the process of tenure upgrading residents should be introduced to the implications of potential tenure options. Residents must understand the rights and responsibilities attached to tenure. It is advisable, therefore, that all adult members of households undergo homeowner or tenant education programmes. The content of such programmes could include:

- The rights of citizenship and importance of participating in local governance matters.
- Household financial management and the responsibility to pay rates and service charges .
- The right to expect adequate service delivery from the local authority.
- Subletting and rental contracts.
- Formal transfer procedures, i.e. how to formally sell a property (see Section 10.3).
- Home maintenance .
- Household energy use.
- Land use zoning.

- Building regulations and improving one's home.


## 10.2.5 Tenure Options

### 10.2.5.1 Right to occupy

The granting of a formal "right to occupy" by the local authority could be a potential way of granting residents permission to occupy a specific site. The contents of this right should be similar to that of tacitly recognised informal tenure, i.e.:

- The right to use a site for residential/commercial purposes as long as the site is continually occupied
- The right to rent out part of the site
- The right to "sell" the right to use the site, on condition this exchange is recorded by the local authority


### 10.2.5.2 Individual ownership

Individual ownership is essentially the right to alienate a property, i.e. to sell it or leave it to one's heirs. This is the most secure form of tenure (for the individual owner) where formal transfer procedures have been followed. Individual ownership is not necessarily a secure tenure option for other members of extended households (although the ownership of properties can, and should, be registered in the name of more than one adult household member). Individual ownership is important for incremental housing and individual ownership will therefore continue to be the main tenure form for low-income housing.

The advantages of individual ownership are:
- Most legally secure form of tenure (for the person in whose name the property is registered, and where formal transfer procedures have been followed)
- Can leave the property to one's heirs or sell the property
- Can potentially use as collateral for loans
- Can make improvements to the property
- Important for incremental housing, as the greater the degree of security the more likely the household is to invest in their housing

- The disadvantages of individual ownership are:
- Ownership can potentially make one liable for paying rates and service charges
- Complex and expensive transfer procedures. As a result, in poor communities, properties are sold informally or handed down from parent to child without the legal processes being followed. Over time the tenure then evolves into a form of family tenure with no possibility of mortgage

loans ever being granted, which means that a housing market is unable to develop.

- Private individual ownership is an individualized form of tenure in which there is usually little scope for engaging with others regarding the implications of ownership (compared with communal ownership).
- Can only be used for "one house on a plot" development and not for blocks of flats.
- Commonly only registered in the name of the head of household, which can disadvantage women and other adult members of extended families, and can result in members of the household losing their accommodation and moving to informal settlements.
- The State has little power to intervene, for example, where there has been informal sale of the property or where a site has not been occupied by the legal owner.
- Community "over rights" may still exist in reality. There have been cases where community organizations have prevented the legal owners from occupying houses and have reallocated the house to someone else.

### 10.2.5.3 Communal ownership

- Communal ownership can take a variety of forms, but the arrangements are complex - and may be too complex for use in an informal settlement. In all cases, the property (or part of the property) must be owned by an institution. Members of the institution have rights to occupy specific units, as defined in a use agreement, which is a contract between the member and the communal ownership body. The right to occupy a unit would usually depend upon certain conditions being met, for example, the payment of a monthly levy. Members may be able to sell their rights, but there may be restrictions as to who the rights may be sold to. It is more secure than rental but not as secure as ownership, as there is a risk of non-payment by members or of bad management. Members may lose all rights to the property if the institution goes bankrupt.

- The various types of legal entities for communal ownership are:
- Sectional Title Body Corporate in terms of Sectional Titles Act of 1986 (Sectional Title is a combination of individual ownership of individual units and communal ownership of shared communal property)
- Company in terms of the Companies Act of 1973, e.g. Section 21 Company
- Company incorporated in terms of the Share Blocks Control Act of 1980
- Co-operative incorporated in terms of the Co-operatives Act of 1981
- Land Trust in terms of the Trust Property Control Act of 1988
- Communal Property Association in terms of the Communal Property Associations Act of 1998

Most of these options are unsuitable for low-income housing in urban areas. A limited alternative in informal settlement upgrading would be for housing

co-operatives, where there are cohesive community groups that have access to support organizations that can advise them. Although the legislation for co-operatives is currently very complex and not ideally suited to housing, co-operatives are potentially the best form of communal ownership for low-income housing. In a co-operative all the residents are members of the co-operative and jointly own the property. Members of the co-operative elect a Board of Directors that will manage the co-operative. Each household has one vote in the General Meetings to take major decisions about the co-operative.

The advantages of communal ownership are:
- Communal ownership can greatly facilitate strong social and economic support networks, which are very important for low-income households. There is a strong tradition of co-operative societies in South Africa - *stokvels* (savings clubs), burial societies, and so on.
- A member leave the rights to their heirs or sell the rights, with the approval of the communal ownership body
- Enables higher density, multi-storey housing and lower bulk infrastructure costs per unit
- The disadvantages of communal ownership are:
- Risk of mismanagement of the institution or of non-payment by others
- Individual usually cannot use their share in property as collateral
- Can be expensive, as the members would need to pay monthly levies to cover the operating costs of the institution
- A low-income communal tenure institution would probably require ongoing local government support in order to be sustainable.
- The possibility of conflict, autocratic leadership or a lack of leadership within communal ownership body.


**10.2.6 The Choice of tenure**

The choice of tenure options is constrained by the available financing options. In terms of the national Housing Subsidy Scheme, project-linked subsidies and consolidation subsidies may only be awarded if full individual ownership is offered. (see Part 3, Chapter 2 of the National Housing Code). Institutional subsidies may use alternative tenure options, but the local authority may not be the developer. (see Part 3, Chapter 6 of the National Housing Code). If the provision of basic services as initial level of upgrading, or in managed land settlement projects, could be funded from other sources, there may be fewer limitations on the choice of tenure option (see 10.10).

If possible, the granting of full ownership in an informal settlement upgrading programme should be postponed until the community have settled into their upgraded environment and are likely to remain there. The informal transfer of fully owned properties results in the new occupants having no legal security of tenure at all, and with little way for the State to intervene.

**10.2.6.1 Tenure for basic and emergency infrastructure improvements**

The first step in terms of security of tenure would be to undertake a social and spatial survey of the settlement, record details of the occupants and number the existing dwellings (see chapter 6 and 7.1). This explicit recognition by the local authority would provide a certain degree of security for the residents. The local authority would mainly be concerned with the external perimeter of the settlement area, while the informal rights to occupy specific structures within the settlement would need to be overseen by the local residents' association. In some cases, this would provide sufficient short-term security, for example, where the residents will need to be relocated at some point.

**10.2.6.2 Tenure for in situ upgrades**

The upgrading of the settlement will require some surveying and laying out of sites, roads, pathways and public spaces, and the integrity of this layout will have to be maintained to facilitate the future upgrading (this is described in more detail in Section 10.4). At this stage residents will have to be given a more formal right to occupy specific sites. A possibility would be to grant an interim "right to occupy", in which the local authority owns the land, keeps a register of occupants and issues registration cards to occupants. The local residents' association would play an important role in the maintenance of a register and ensuring the integrity of the layout.

**10.2.6.3 Tenure for roll-over upgrades**

Roll-over upgrading projects, in which a full level of service and formal houses are to be provided, would normally be financed with project-linked housing subsidies, and therefore offer full ownership.

A more complicated possibility, but which could offer some alternative tenure options, would be for the local authority to establish a separate housing institution (such as a Section 21 company), or other suitable institution, to obtain institutional subsidies. On this basis the properties would be leased for at least four years, and thereafter could be transferred into individual ownership. This would help to minimise the negative impact of informal property transactions and ensure that the households eventually granted ownership are those who desire ownership. However, setting up housing institutions for small projects would not be viable as the operating costs of the institution would be too high per unit. The institution's operational costs per unit would only be affordable if there was an existing suitable housing institution or, for setting up a new housing institution, where a large scale informal settlement upgrading programme was planned by the local authority.

**10.2.6.4 Tenure for managed land settlement**

As for Section 10.2.5.2

**10.2.6.5 Tenure for new township development**

If a project is to incorporate full infrastructure and housing it is likely to be funded

with project-linked subsidies and will therefore have to provide full ownership.

## 10.3 LAND SURVEY AND REGISTRATION

### 10.3.1 Introduction

As the terms are commonly (and legally) understood in South Africa, cadastral surveying and land registration produce instruments whose primary objecttive is to support secure land tenure. In addition they provide the information for billing of services and rating (land taxation) and the maps for designing and providing engineering services. They are designed to give holders of real rights in land (e.g. owners, long term lessees and holders of servitude rights) legal protecttion against other people grabbing their land, building over their boundaries, or the government unlawfully expropriating it. Title deeds provide owners with the potential to mortgage their property or raise loans against it in other ways.

Boundaries define the limits of a parcel (erf) of land. A professional land surveyor places beacons that are monuments to these boundaries and produces a cadastral diagram, a form of map, which makes it possible to replace the beacons in their original positions if they are destroyed, stolen or deliberately moved. It is this parcel that is purchased when one buys a home, not the house. Land registration is performed by a notary or conveyancing attorney and is executed in a Deeds office, such as the one in Cape Town. Registration ensures that people who buy and sell property, or acquire it through the execution of a will, are the ones entitled to buy or sell it or have it bequeathed to them. Survey diagrams are stored in the Surveyor General's office and title deeds are stored in the Deeds office.

In this section we are going to use the terms surveying and registration more loosely than they are commonly applied. Registration here means any document or process used to record a transaction in land, be that by sale, gift or inheriting it from a deceased estate. The record can refer to a rental agreement, an occupation permit, rights arising out of membership of a communal occupation scheme, a long term lease or ownership and any other tenure forms mentioned in section 10.1. Surveying refers to the measurements and mapping required to record the position of boundaries of a parcel or a structure that people occupy.

There are two key factors for a system of boundaries and registration to be effective. Firstly the boundaries and registration process must be both legal and legitimate. The beneficiaries must feel positive about them. Secondly, they must be used. If beneficiaries do not use an official or agreed system to record

transactions in land and/or the agreed boundaries are ignored, you will not support secure land tenure. In fact, you may end up in a situation where people are in a far more uncertain, precarious position than they were before. The long term implications may be even more severe as people/institutions will not loan money against a property which they feel is not secure.

This is a major issue in land tenure upgrading projects in Cape Town. Research at UCT has shown that people in informal settlements are positive about official registration and boundaries. However, in a few test cases of site and service schemes, between 10% and 20% of parcel occupants had built shacks that encroached over the boundaries. Moreover, in the first 20 000 houses to be transferred in Khayelitsha, there were inaccuracies and/or disputes relating to over 4000 of the records relating to the intended beneficiaries. It is very important that an appropriate system of registration and boundaries is in place and that the tenure form that is used will allow the authorities to rectify the situation if problems occur. For example, once ownership is registered in the Deeds Office, the State has very little power to intervene. Therefore, as is discussed in section 10.1, ownership should be used with extreme caution in upgrading projects.

The social, economic and local political dynamics of a settlement play a major role in usage of the official records and boundaries.  It is critical that you read all the earlier chapters of this Handbook before you use this section.

We begin by discussing boundaries and surveying, then registration and finally we discuss some of the reasons underlying problems that might occur and make suggestions as to how the situation might be improved.

## 10.3.2 BOUNDARIES AND SURVEYING

### 10.3.2.1 The Footprint of the Structure is the Boundary
The "footprint" of a dwelling structure defines the extent of the rights of occupation of a number of people e.g. a family unit. This is likely to apply to some form of communal or community-based tenure system. It can be legally formalised and registered in the Deeds Office with an accompanying cadastral survey, e.g. a sectional title scheme. However, in the case of informal settlement upgrading projects it is more likely to be the footprint of a shack, which has been numbered and a social survey carried out as per section 10.1.

Ideally, power and control over the unoccupied space between the shacks will vest in the authorities and/or a community based structure, but *de facto* it may vest in a "shack farmer", "warlord" or gang. Consequently, new, unauthorised shacks may be constructed which contravene a number of agreements. It is therefore important to record the positions, or at least the existence, of official structures and deal with transgressions in terms of section 7.1.1.2

Painting numbers on official shacks is the first step in administering such a situation. In some settlements, whitewash lines have been painted around the

footprints of these shacks on a regular basis to prevent shacks being expanded to accommodate additional lodgers. Photographing the shack, preferably with all the intended beneficiaries in the same photo, and incorporating this as part of the official records can further enhance security.

Aerial photographs are also very useful as part of an official record, but they should be taken from the correct angle. In the Marconi Beam settlement, a series of rectified aerial photographs - photos where the distortions have been removed - were found to be useful in administering the settlement. These are digital photographs that have been turned into maps using photogrammetric techniques. The shack numbers can be recorded on the digital rectified photo. If the rectification is of sufficient quality, a series of rectified photos (ideally orthophotos) can be overlaid on one another to check for changes in a settlement. Ideally, this should not be necessary and the process is expensive. However, in volatile situations it may be necessary to use this technique.

### 10.3.2.2 General Boundaries

A general boundary runs along the general position of a physical feature, but its position has not been precisely determined. In England, this might refer to a hedgerow where the boundary line might run along the middle, either edge of the hedge or even a ditch running alongside the hedge. In informal settlement upgrades, this is likely to refer to a fence between neighbours. Ideally the fence would have been constructed by community members themselves and the position would have been determined in terms of a settlement's rules (see section 7.5.6).

The advantage of general boundaries is that no survey is necessary. People agree on the position of the fence and that becomes the boundary. Providing people can afford the materials to build the fence, and the fencing materials are not stolen, this is a good interim measure in an *in situ* upgrading situation. In addition, as will become clearer in the discussion below, as a general rule for both fixed and general boundaries, using good quality permanent fence poles as boundary beacons is a far better practice than using iron pegs. Furthermore, if general boundaries are adopted for a long period, and then a tenure form is introduced that requires registration in the Deeds office, the fence corners can be surveyed and adopted as boundary monuments, and the *de facto* occupation patterns will mirror the legal records of the boundaries.

The main disadvantage of general boundaries is that they are unsuitable in volatile, conflict situations where people may disagree on boundary positions or powerful groups (e.g. shebeen owners) may move the boundary fences to enlarge their parcels. If there is no surveyed map of the agreed boundary position, a person who has had their parcel reduced in size by such an action will not be able to defend their boundaries. Also, if services are to be provided, some form of surveying and mapping will be required.

During research projects in Cape Town into appropriate boundary types, in a number of focus groups the issue of being able to defend a boundary and not allowing a neighbour to encroach was strongly emphasised. "If you allow (an encroachment of) one centimetre today, then tomorrow it will be more", was stated in a couple of sessions. There was a desire for some external agent (e.g. a surveyor, council official) to be able to judge boundary disputes. In fact, researchers were asked to judge a number of boundary disputes on occasion. One way to improve such a situation is that a person in the community or a building inspector can record distance measurements when fences have been built. However, addressing the social dynamics that can lead to encroachments and the movement of fences is more important.

Another disadvantage of general boundaries is that for a parcel to be registered in a Deeds Registry, the fence corners will have to be surveyed, and the boundaries will then become fixed. Unsurveyed general boundaries are not acceptable for registration in the Deeds Office in South Africa.

### 10.3.2.3 Fixed Boundaries

Fixed boundaries are straight lines between corner points. The most common form of fixed boundaries in Cape Town are those defining parcels on a general plan or cadastral diagram. Beacons (e.g. iron pegs) mark the corners, and, within certain limits, the position of the boundary is not open to interpretation as is the case of general boundaries. The beacons tend to be surveyed and a record exists so that they can be replaced if necessary. Fixed boundaries have to be used if a parcel is registered in the Deeds Office for the purpose of ownership, long term lease or a servitude. In informal settlement upgrades, if they have been surveyed they are appropriate in situations where powerful groups attempt to grab land from people who cannot defend themselves against such invasions. The authorities can intervene and order people to move the fences and other structures so that they are aligned with the official boundaries.

## 10.3.3 Land transactions and registration

There are a number of ways to give effect to a land transaction (e.g. sale, inheritance). The most rigorous is registration in a Deeds office, but we are more interested in less formal forms of tenure. As discussed in section 10.1, there are numerous form of tenure that can be recorded. This includes communal tenure, individual holding where one person holds all the power to trade in the parcel, family tenure where the family as a whole have rights in the parcel, servitude rights and personal rights such as a *usufruct*. We discuss some of the modes of giving effect to land transactions that are relevant to informal settlements in Cape Town. Then we discuss some of the problems that may occur with boundaries and registration, and finally we discuss ways of avoiding or improving such situations.

### 10.3.3.1 Public Witnessing and Symbolic Delivery

Public witnessing entails people conducting a transaction in public without using a document to record the transaction. Often some symbolic act - *e.g.* a party on the site or the handing over of an oak twig - is performed to give effect to this transaction. Most so-called "informal sales" occur along these lines, although they may not necessarily take place in public.

### 10.3.3.2 Private Conveyancing

In the case of a sale, private conveyancing involves the seller giving the buyer the documents that describe the rights to the land. There is no involvement by the State. For example, in an informal settlement, this would involve the seller merely handing over the document that records their right of occupation such as a rent card. This is also how many informal transactions take place, including situations where ownership is the tenure form.

### 10.3.3.3 Deeds or Official Registration

Loosely defined, deeds registration involves transactions being effected in some official office and an official record is kept of the transaction. As discussed earlier, in South Africa ownership and long term leases have to be registered in the Deeds office by a conveyancer.

For informal settlement upgrades, where less formal forms of tenure are used, the transaction is likely to take place in a local office in front of an official. This is the most commonly used form of administering the land tenure system in informal settlement upgrade situations, but informal transactions using private conveyancing and symbolic delivery and witnessing often take place. The challenge is to encourage people to use the official "deeds" type of registration or to incorporate symbolic delivery and private conveyancing in the formal system of recording transactions.

## 10.3.4 Problems with fixed boundaries and registration

From an administrator's perspective, a number of problems may arise in providing formal land titles to people in informal settlements. In essence, the fixed (surveyed) or general boundaries should be adhered to when houses and fences are constructed and registration should be used when land rights are transferred from one person to another. If this does not happen, then some major long term administrative headaches will arise. The magnitude of the problem depends on the type of tenure that is used.

If a large number of informal transfers take place in an area where ownership or long term lease is the tenure form, then the entire area is likely to be blacklisted by financial institutions. Moreover, if this takes place over a long period, then the tenure system is likely to evolve into a form of family tenure. There are areas in Grahamstown where there are a large number of "dead titles" dating back to the

19$^{th}$ century where individuals in the family who have the means, move to other areas to own their own home. There is no incentive for the upwardly mobile individual to invest in the family home.

Another problem with titling and registration is that the process may place substantial legal power over a parcel in the individual whose name appears on the title deed. This may not have been the case prior to registration. This individual may then evict people in the house (e.g. extended family members) or sell the house and keep the proceeds for themselves. Research has shown that what is particularly relevant in this context in Cape Town is when unmarried couples split up. The registered owner may move out and sell the land to a third party, and the other partner and the children may have to move out of the house.

Adjudication and titling should therefore ensure that the process does not legally extinguish the rights and powers that certain people had before the land was formalised.

### 10.3.4.1 Reasons for Boundary Encroachments

"Encroachment" exists where official plot lines are ignored in the actual use of plots. It is necessary to understand the reasons why encroachment may occur in order to deal with it effectively.

A combination of the following may underlie encroachment patterns:

1) Encroachment, particularly onto public land, may be due to opportunistic land grabbing;

2) Encroachment may be due to lack of awareness of the position of surveyed cadastral monuments; boundary beacons are not pointed out, or they are stolen or removed and used as implements. There is clear evidence in one case study in Cape Town that where the beacons were pointed out, residents built their fences along the legal boundary lines. In another area, the beacons were not pointed out, and as could be expected, fences were not built along the boundaries.

3) Encroachments may be the result of contractual arrangements. E.g. negotiations between neighbours may take place, encroachments are motivated by a need for more space to house lodgers or extended family members or to build a spaza shop or a shebeen;

4) Individuals may not be able to define or defend the parcel boundaries that were originally allocated to them because factions force them to allow others to encroach.

5) Fence encroachments may be a result of one fence being out of position and then neighbours subsequently attach their fences to this fence, thus continuing the pattern of encroachment;

6) Residents may believe that structures such as fences and shacks are temporary and moveable. When a permanent structure is constructed,

they intend to align their structures with the surveyed cadastral boundaries.

**10.3.4.2 Reasons for Informal Exchange of Properties**

"Informal exchange of properties" refers to situations in which properties are sold / exchanged without the transaction being handled by a conveyancer or the Deeds Office. In order to be able to prevent the widespread prevalence of informal property exchanges it is necessary to understand the reasons why they may occur.

1) Informal sales or transfers to strangers or to family members.
2) Incorrect original adjudication and recording of beneficiaries.
3) Perceived high costs or difficulties in using the record system (the "registration system") may discourage residents from using it.
4) Attitudes to land registration systems may be positive, but landholders believe that it is not necessary to register every transaction in land and the implications of using or not using land registration are not fully understood.
5) Residents may not use the system as they see no benefit in using it e.g. if the *de facto* tenure is family tenure there is no need to record a transaction within the family.
6) Factions such as street committees, political factions, gangs or warlords control access to land and power over who may live in the area. People may be evicted for having the "wrong" political affiliations. Legal heirs may be prevented from occupying a house.
7) Residents may avoid using the "registration" system to hide the transaction from factions within the community such as street committees and warlords for a variety of reasons
8) Land may be held *de facto* as family land or in joint tenancy or ownership. If the head of house separates from his or her spouse or common law partner and leaves, the household remains in residence without updating the records.

## 10.3.5 Reducing problems

The following are suggestions as to how the issue of encroachments and informal transactions can be addressed.

Ownership or long term leasehold should not used as a tenure form until a community can afford the transaction costs and it is patently clear that informal transactions are unlikely to take place.

One way of regularising what are now regarded as informal transactions is to make the official processes more accessible to communities. Modern technology

makes this possible. For example, transactions can be recorded on site using a mobile GIS or data logger by officials who regularly visit an area (e.g. building inspectors). Or they can be recorded and transmitted as an SMS via cell phone. The capacity for the buyer and seller to enter into a transaction can be checked at a central facility later and accepted or annulled.

Technology can be used to improve transparency, publicity, reliability and understanding of the records. For example, photographs of all occupants who are intended beneficiaries can form part of the title certificates. Videos and audio-tape recorded data can be used to record interviews to establish that the community understand how the official land tenure system functions and is administered.

Ideally, boundary beacons should be of a permanent nature e.g. fence posts. Only when these have been in position for a reasonable period should they be surveyed. Otherwise it is vital that boundary beacons are pointed out and the site measured up in the presence of the beneficiaries when it is handed over.

Informal transactions and boundary encroachments are problems that can at best be alleviated as these are generally a consequence of social and political dynamics rather than the design of the technical systems that are supposed to support land tenure security. What is critical is that there is ongoing education over land rights, inheritance and sales of land to strangers and that the situation is continually monitored.

## 10.4  INFRASTRUCTURE

### 10.4.1 Overview

#### 10.4.1.1  Objective
The provision of infrastructure forms a substantial part of the development of informal settlements.  Not only is the cost of infrastructure in the order of 40% of the total subsidy value in the provision of a serviced site plus a 30 m² house, but it also adds a significant load to the maintenance resources of the local authority.  To find the optimum solution it is important to have adequate knowledge regarding the required infrastructure.  The objective of this section is therefore to provide some useful guidelines for the provision of infrastructure.

#### 10.4.1.2  Principles

**10.4.1.3 Integration with other disciplines**

It is important that infrastructure be designed in a fully integrated manner. This also implies that layout planning be carried out in accordance with infrastructure requirements and the nature of housing to be provided. This integrated design must be thoroughly reviewed, and its success depends on regular liaison between all relevant parties.

**10.4.1.4 Local Community Involvement**

The success of any service delivery option for informal settlements is directly related to the extent to which ownership of the system is accepted by the community. The community must therefore be involved in all decisions made with respect to the planning, organisation, implementation and maintenance of the proposal with specific attention being given to water, sanitation, solid waste services and provision of electricity proposals.

The Servicing Authority must be equipped to educate communities with respect to services to be provided to their settlements and to so build an ongoing partnership with the community. Failure to cover this important aspect will result in high maintenance costs due to abuse of the installed service, often out of ignorance on the part of the community.

## 10.4.2 Site assessment

It is a waste of time to start with any layout or infrastructure concept before a thorough site assessment has been completed. The following are crucial elements to this assessment:

**10.4.2.1 Topography**

A detailed topographical survey of the site and existing services is necessary. This should be well planned and include elements outside the site which may impact on the design.

**10.4.2.2 Existing Services**

As-built drawings are sometimes incorrect and it is advisable to have all relevant existing services surveyed. Major water pipes should be exposed and surveyed. All servitudes must also be indicated on the drawings.

**10.4.2.3 Environment**

Establish all environmental restrictions such as floodplains, ecologically sensitive areas, etc. This must first be verified and signed off by the local authorities' environmental official. Existing vegetation should be maintained wherever possible in order to improve stormwater management, prevent soil erosion and enhance the overall living environment.

**10.4.2.4** **Access**

First establish the best point of access to public roads. An access study and traffic impact assessment is always advisable. This will provide confirmation with regard to access positions and configuration. It is further recommended to also design for construction access.

**10.4.2.5** **Geotechnical Information**

Undertake a preliminary geotechnical investigation of the site prior to commencing any design work. The investigation should cover:

- subsoil profile
- founding conditions
- groundwater conditions
- subgrade conditions
- materials utilisation potential
- excavation conditions
- contamination

## 10.4.3 Stormwater Management

Sound stormwater management is necessary to ensure that key requirements such as the following are met:

- No development within watercourses, floodplains or other ecologically sensitive areas.
- The correct site levels to ensure free drainage and adequate road gradients.
- No unnecessary stormwater infrastructure, to minimise costs. (The cost of bulk earthworks and stormwater infrastructure often amounts to more than 25% of the total services costs.)

The basic guidelines for stormwater management are well documented in Chapter 5 of the "Red Book". Some specific aspects do, however, need to be highlighted:

**10.4.3.1** **Basic Infrastructure**

Provide earth sidedrains.

Clearly demarcate floodplains and ecologically sensitive areas on site.
Implement awareness processes which are reinforced with information signs.

**10.4.3.2** **Emergency infrastructure**

Infrastructure should be limited to what is required to ensure a healthy environment. Emergency settlements are generally erected for short durations to deal with a particular crisis or emergency. Services should thus be of a temporary nature and not capital intensive. Care must, however, be taken to ensure "free

drainage" of the area without trapped low areas. Grading of the site is thus recommended with access tracks being limited to graded earth tracks and stabilised only with hardcore where necessary to allow access by service vehicles. Formal stormwater drainage should thus be kept to the absolute minimum.

### 10.4.3.3 Roll-over upgrade
**Bulk earthworks**

Establish major drainage routes and shape at minimum gradient of 0,5%. Balance of site at 0,5% perpendicular to drainage routes. Stockpiling and double handling may be required to overcome the constraints of roll-over development. Make ample allowance for volume difference due to compaction, wind erosion and site clearance losses. Avoid the importation of material as far as possible.

*Stormwater*

Cognisance must be taken of floor levels of existing structures when designing the roads. Floor levels of structures should be a minimum of 150mm above the theoretical back of footway level of the road calculated at a 3% rise above top of kerb/edging and at least above the 1:50 year flood level.

Formal system to accommodate the minor storm event. Aim for long overland flows (200 m to 250 m) to minimise cost of underground infrastructure. The road prism must be designed to carry the 1:20 flood and can be designed with an inverted camber provided a central in-situ cast concrete channel is incorporated.

### 10.4.3.4 In situ upgrade
*Bulk earthworks*

Relocate structures from flood prone and ecologically sensitive areas. This requires proper community liaison and must be followed up with an awareness process. Bulk earthworks will be necessary to fill and grade areas that are not free draining.

*Stormwater*

As for 10.4.3.3.

Create alternative escape routes where it is difficult to eliminate a low spot. This can be achieved by installing an oversize pipe to avoid the risk of blockage. Alternatively an escape route can be established between the structures. Such "servitude" must be protected by doubling its use as a footpath.

### 10.4.3.5 Managed land settlement
*Bulk earthworks*

As for 10.4.3.3.

*Stormwater*

Open drainage channels along unsurfaced roads. Keep as shallow as possible

to allow for surface crossings at intersections.  For sites steeper than 10% the open channel must be along the higher side of the road.  It is also important to do a preliminary design for the final drainage system required when these roads will be surfaced.

**10.4.3.6 New township development**
As for 10.4.3.3 & 10.4.3.5.

Other important guidelines:
- Make ample allowance for the stabilisation of bulk earthworks to protect them against wind erosion.
- Never use a stormwater pipe smaller than 375 mm diameter.

## 10.4.4 Roads

This section largely refers to Chapters 7 and 8 of the "Red Book".  The four major road categories are as follows:

**Code  Category**
UA    Major collector/distributor (Bus Route)
UB    Local collector/distributor (Bus Route)
UC    Access Collector
UD    Basic Access streets, courts or cul de sacs

**10.4.4.1 Basic Infrastructure**
Establish rudimentary gravel access strips for service vehicles.  The level of service will depend on how long the informal township will be maintained.

**10.4.4.2 Emergency infrastructure**
Establish a basic grid of gravel access streets for service vehicles such as refuse trucks, fire tenders, taxis and police vans.  This grid must be supported by a secondary network which will provide clear pedestrian access for service staff such as fire fighters and police.  The main grid must consist of 6 m wide gravel roads whilst the rest can be unsurfaced. These tracks can be stabilised where necessary to accommodate service and emergency vehicles.

**10.4.4.3 Roll-over upgrade**
The key parameters with regard to road width and surfacing are as follows:

| Category | Road | | Verge/Footway | |
|---|---|---|---|---|
| | Width (m) (1) | Surfacing | Width (m) | Surfacing |
| **UB** | 6,0 | Tar[2] | 1,5 | Tar |
| **UC** | 5,5 | Tar | 1,2 | Gravel[3] |
| **UD** | 4,0 | Tar | 1,0 | Gravel |

Notes:
1) Width includes kerbs.
2) Tar implies either hot-laid asphalt (premix), chip and spray seals, or combinations of seals and slurry.  The selection of surfacing depends on design requirements and availability of material. The use of gravel roads should be seriously considered wherever conditions permit.
3) If the in-situ material is sand.  It however only requires levelling and compaction if the in-situ material consist of clay material
4) In areas where the subsoil and climatic conditions permit it, these roads can be surfaced with a gravel wearing course. It should, however, be acceptable to the local maintenance authority.
5) For narrow roads such as category UC and UD it is important to provide large bellmouths at intersections.  This is necessary to provide adequate turning space.  A guideline is that these bellmouth radii should not be less than 8 m.

**10.4.4.4 In-situ upgrade**
In principal the same as for 10.4.4.3.  This upgrade however requires a far more flexible approach.  It would often be impossible to provide vehicle access to all dwellings.  In some instances the minimum road widths may need to be relaxed in order to overcome space limitations.

Crossfall or conventional camber designs are also acceptable but care must be taken to ensure that the 1:20 year flood can be carried within the road prism.

Because of the general sandy nature of some informal settlements and the need for roads to be designed around existing structures, a longitudinal grade of 0,5% and a crossfall of 4,0% should be aimed for.

**10.4.4.5 Managed land settlement**
Managed Land Settlement entails a two stage approach to road development.  It is envisaged that the access streets would initially only be constructed to gravel level.  The eventual parameters are however similar to 10.4.4.3.

**10.4.4.6 New township development**
Refer to 10.4.4.3.

**10.4.4.7 Road pavement material**
Guidelines for road pavement designs are well catalogued in Chapter 8 of the

"Red Book", especially under Appendices A and C. The one important aspect is that UD and even UC category roads are not designed for heavy vehicles. The key problem is however always during the construction of houses, when these roads are often badly damaged by large material delivery vehicles. The only solution is to tightly manage the building contractors and to make them liable for all damages to roads.

Other important guidelines:

- Save on road width but not on layerworks design. Never use inferior material.
- Always do a geotechnical survey. Road failure is often due to the presence of a high groundwater level.
- Test material and compaction at regular intervals during construction.

### 10.4.5 Water Supply

The objectives of water supply include the following:
- the provision of adequate water for domestic use and hygiene;
- economic development of the community (e.g. small scale industries and agriculture);
- firefighting.

This section largely refers to Chapter 9 of the "Red Book". It is however necessary to highlight some qualifications and additional guidelines.

The following table provides key guidelines with regard to the major water supply elements:

| Project Category | Network | Supply Type | Firefighting |
|---|---|---|---|
| Basic Infrastructure | Rudimentary | Vendors [1]/Tanker Supply | Hydrants [2] |
| Emergency Infrastructure | Rudimentary /none | Tanker Supply | None |
| Roll-over upgrade | Full | Metered erf connection | Hydrants [4] |
| In-situ upgrade | Full | Metered erf connection | Hydrants [4] |
| Managed land settlement | Full | Metered erf connection | Hydrants [4] |
| New township development | Full | Metered erf connection | Hydrants [4] |

Notes

1) Vendors/water kiosks assist in reducing the maintenance costs on standpipes. These supply points must be spaced to satisfy the following conditions:

    No more than 300 people served by each supply point.

Water collection trips should be less than 200 m.

2) Hydrants should be spaced as best possible, but should as a rule at least be positioned within formal roads at entrance points to the settlement.

3) Where a conventional water reticulation network exists in close proximity to the settlement, this reticulation should be extended into the settlement and standpipes provided within 200m walking distance of any dwelling. Standpipes should be metered to enable consumption to be monitored and if necessary for cost recovery measures to be implemented. The application of pre-paid metered standpipes should be investigated.

4) Fire water design must be done in accordance with "Low Risk Group 3" requirements

Other important guidelines:

- Always investigate the option of pressure reduction on the bulk supply, as it proved to be a very effective means of water loss management. The pipe sizes must therefore be designed for the reduced input pressure. However, pipe classes must always still be designed for maximum possible pressures.

- Local fire departments must carry out drills in informal areas to familiarise themselves with hydrant conditions and layout shortcomings. All hydrants must also be checked for accessibility and adjusted if necessary.

## 10.4.6 Sanitation

The provision of appropriate sanitation within informal settlements is essential to improve the health levels and to protect the natural environment. The following table provides guidelines with regard to sanitation services infrastructure provision:

| Project Category | Disposal Type |
| --- | --- |
| Basic Infrastructure | VIP's/Chemical Units/Communal Waterborne Systems [1] |
| Emergency Infrastructure | Chemical Units |
| Roll-over upgrade | Erf connections to full waterborne systems [2] |
| In-situ upgrade | Erf connections to full waterborne systems [2] |
| New township development | Erf connections to full waterborne systems [3] |

Notes

1) This application depends on the geotechnical conditions and

topography.  Ventilated Improved Pit latrines (VIP's) are not recommended if a pervious sand layer is underlain by an aquifer which has extraction potential.  Communal waterborne systems can obviously only be installed if adequate bulk services exist in the nearby vicinity. However, under communal waterborne systems it is important to caution against the high operating cost, which includes the full time employment of janitors.

2) Chemical toilet units may be required to enable the roll-over process.

3) Some Managed Land Settlement may only have communal ablution facilities as first stage sanitation development.  The full reticulation with erf connections will however be installed upfront.  Individual erven will then later be connected as houses are built.

Other important guidelines:

- Sanitation facilities under the basic and emergency infrastructure categories should be provided at a minimum ration of 4 dwelling units per sanitation facility.

- Avoid midblock sewers as far as possible. Flexibility is however important to achieve optimum solutions and midblock sections can therefore be allowed in isolated cases. Where midblock sewers are unavoidable, every effort must be made to create manholes within road reserves for ease of access. All rodding eyes must also be located within road reserves for the same reason.

- Horizontally curved sewers are also acceptable in certain instances, especially to eliminate unnecessary manholes when planning in-situ upgrades.

- The number of manholes can be limited by installing rodding eyes at the head of short runs, i.e. sections which drain less than 8 units and which is shorter than 45 m.

- Always ensure that prefabricated manholes and chambers are designed to counter flotation when empty (again, the importance of a proper geotechnical evaluation)

## 10.4.7 Solid waste collection

Options are:

1) Community based refuse collection service.
2) Skips/ containers / swivel drums.
Conventional black bag once a week Municipal refuse collection service.
4) Wheeled "Otto Bin" once a week Municipal refuse collection service.

The recommended community based option is to divide the settlement into

zones of approx 80 dwelling units.  Each zone is then allocated to a worker who is responsible for the door to door servicing of 5 zones, one per day. Level of service is the issue and collection of a single black bag per dwelling per week and the general cleaning of the zone.  Bags are taken to central collection points by the worker from which points refuse is removed daily by the Local Authority. Workers would expect to be remunerated by the local authority.

The provision and servicing of skips and bins is a commonly used system but has the disadvantage of refuse being strewn around the containers.  There is also the risk of children or animals falling into the container and not being able to climb out.

The recommended options are as follows:

| | |
|---|---|
| Basic infrastructure: | Option 1 or 2 |
| Emergency infrastructure: | Option 1 or 2 |
| Roll-over  upgrade: | Options 3 or 4 |
| In-situ upgrade: | Options 1, 3 or 4 |
| Managed land settlement: | Options 1, 3 or 4 |
| New township development: | Options 3 or 4 |

## 10.4.8 Energy

The objectives of electrifying informal settlements are summarised as follows
- To eliminate illegal wiring crossing public roads surrounding settlements.
- Provision of electrical connections to entrepreneurs such as operators of spaza shops and taverns.
- To provide electricity supplies to as many dwellings as possible in order to raise living standards, stimulate home industries and enable students to study at night.
- Render the supply of electricity to informal settlements in as safe as possible manner in compliance with the terms of the Occupational Health and Safety Act.

Electrification of any settlement should only be considered if:

- The settlement is substantially stable.
- The area is not scheduled for upgrading into a formal township within a period of 3 years.

- Electrification of settlements located within flood plains, servitude areas or other areas not considered acceptable by the Local Authority should not be considered.
- The electricity infrastructure design should incorporate an open overhead conductor/ bundle conductor form of construction using both overhead and underground house connections. Streetlights can be mounted on the poles. This type of construction is both flexible and cost effective and can be installed relatively quickly and efficiently. Should the settlement be relocated at a future date the materials can be recovered and re-used elsewhere.
- Supply to consumers should be through pre-payment meters.

### 10.4.9 Telephone
The provision of a telephone service to informal settlements is usually limited to public telephone boxes or service centres.

### 10.4.10 Postal service
Obtain input from the postal service providers in your area.

## 10.5 MAINTENANCE

### 10.5.1 Overview

Rapid urbanisation over recent years has resulted in increased demands for the maintenance of infrastructure. At the same time local authorities are experiencing increasing financial pressure. It has therefore become essential to optimise maintenance efforts in order to stave off capital expansion. At the same time local authorities are insisting that infrastructure installed in new townships have low maintenance requirements. This, however, often results in infrastructure costs that are unaffordably high if the funding is to be from housing subsidies. This section provides broad guidelines for maintenance within the various categories of settlement development. The likely costs of maintenance must be assessed at the start of a project and budgeted for.

### 10.5.2 Maintenance required for Basic Infrastructure & Emergency infrastructure
The guidelines are similar for these two development categories.

- Maintain standpipes and ensure that there are no leaks.
- Ensure that chemical toilets are regularly serviced (at least once a week).
- Keep access routes clear for emergency vehicles. Even though these may be dirt roads, it is important to properly fill potholes which may appear from time to time.
- Stormwater ditches and intakes must also be regularly inspected and cleaned before and during the rain season.

### 10.5.3 Maintenance required for Roll-over upgrade, In situ upgrade, Managed land settlement & New township development

These categories all refer to more formal development and will be dealt with under the local authorities' normal maintenance routine. A few items must however be emphasized:

#### 10.5.3.1 Bulk Earthworks
Sand areas that had been cleared of vegetation must be regularly re-stabilised with straw until development takes place.

#### 10.5.3.2 Stormwater
Road failure in housing developments often occurs due to blocked stormwater systems. It is essential that these at least be cleared just before or at the start of the rain season. Stormwater ponds are often neglected and become illegal refuse dumps. It is important that the nearby community be well informed of the function and necessity of such ponds. A neat and well kept pond can become an asset for the adjacent community.

#### 10.5.3.3 Roads
One of the biggest problems in the Cape Flats areas is windblown sand and litter, which in areas cover entire road widths. This material lands in the stormwater system and also causes ponding in roads. Regular sweeping only deals with the symptoms and stabilisation of the verges and undeveloped sites is essential to stem this problem. An option may be to place precast concrete strips in front of catchpits during the dry season. These are then removed when the first rain falls.

Some road pavement layers for housing developments are at times inadequate to withstand the heavy vehicle traffic loads during construction of the houses. Potholes could then occur and it is recommend that these be repaired as soon as possible, failing which the damage will rapidly increase. Manhole and catchpit covers are essential, not only because of public safety reasons, but also because they protect the underground services. It is therefore of utmost importance to replace stolen or dislodged covers as regularly as possible. Non-metal covers are preferable as they have no resale value.

#### 10.5.3.4 Water Supply
One requirement of water loss management is to regularly inspect for and repair leakages on the network. This also applies to yard taps and toilet systems. Here is an area where community-based maintenance can be effectively employed e.g. the "barefoot plumber" approach (see 10.5.4) as

successfully initiated by the City of Cape Town.

Again it must be emphasised that fire hydrants must be regularly inspected to ensure that they remain well marked and accessible.

### 10.5.3.5 Sanitation

The biggest problem with sewer systems is that they can be abused by ignorant users.  This not only causes blockages, but may also result in damages to pump and automatic screen installations.  The single best solution to this problem is a sustained awareness campaign, which should be repeated on an annual basis.

## 10.5.4 Community-based Maintenance

Although the principal of community-based maintenance has been promoted for many years, not many successes can be showcased.  What has become evident from the examples where it worked, is that it brings ownership and responsibility for service delivery in a very effective way closer to the community.  Additional to that are also the opportunities for small business empowerment and employment creation.  This maintenance approach must therefore be widely explored and supported.  Examples of where it has been employed are:

| | |
|---|---|
| Sikhumbule (Driftsands, Cape Town): | Road sweeping and pump station maintenance<br>Refuse collection |
| Mvula Trust (KwaZulu Natal): | Community maintenance on rural water supply schemes |
| Guguletu & Nyanga (Cape Town): - 55 restricted plumber candidates (27% female) were | "Barefoot Plumbers" initiative locally recruited<br><br>utilised for plumbing repair work in these areas after receiving training in basic plumbing skills. |
| Ntuthukoville (Pietermaritzburg) | Unemployed members of the community are employed, *via* a Community Development Trust, to collect refuse, clean roads & drains, maintain public open space manage community facilities.<br>(http://www.usn.org.za/hep/hep.htm) |

### 10.5.5 Maintenance Management Systems

Development of informal settlements brings about many challenges but also many new initiatives. This also applies to the maintenance efforts necessary to make these areas tidy and proud neighbourhoods. The only way to really balance the available resources with these new demands is to do the maintenance in accordance with a good plan. The application by local authorities of appropriate maintenance management systems is therefore recommended. These systems are based on the latest information technology and can be adapted to suit the size and specific needs of each local authority.

## 10.6 TOP STRUCTURES

### 10.6.1 What is a Top Structure Delivery System?

One of the greatest challenges facing the implementers of a low-income housing project is to design a top structure delivery system that makes effective and efficient use of the available resources e.g. finance, skills and materials.   A top structure delivery system comprises three inter-related aspects.  The first is the tasks that need to be performed to deliver the top structures.   The second is the allocation of responsibilities and tasks to the appropriate role players.  The third element is the philosophy that guides the implementation of the project and therefore influences the allocation of roles and responsibilities in a project.  For example one project's primary objective could be to deliver top structures in a way that maximises job creation for the local community whilst another project's objective could be to achieve economies of scale and build the top structures as quickly as possible.  In the first instance local builders are likely to be used while in the latter instance a large building contractor is likely to be appointed.

A top structure delivery system must be designed to address the housing needs of beneficiaries. Beneficiaries must therefore be given real choices in the process.

### 10.6.2. Some Issues Related to Top Structure Delivery

#### 10.6.2.1 The specific characteristics of each project
When designing the top structure delivery system it is important to recognise

that there are a number of different ways the system can be designed and that each system has advantages and disadvantages.  It is also important to recognise that each project presents different opportunities and constraints.  For example in one town there may be numerous skilled building contractors and numerous materials suppliers. In another town there may be none. These factors have to be taken into account when designing the top structure delivery system.

**10.6.2.2 The relationship between project type and the top structure built**
The project types covered by this handbook have different implications for the type of top structure that is likely to be built, who is responsible for building it, how it is financed and the building and town planning regulations that will apply. These implications are outlined in Table 10A shown at the end of this section.

**10.6.2.3 Building Regulations: developer/ contractor built housing**
Houses built by developers and contractors are subject to the Housing Consumer Protection Measures Act (Act 95 of 1998) and are covered by the warranty scheme of the National Home Builders Registration Council (NHBRC).  The technical standards of the NHBRC, as set out in Government Gazette R 1406 of December 1999, the National Building Regulations and the Ministerial National Norms and Standards in respect of Permanent Residential Structures are the minimum technical guidelines for the construction of houses.

**10.6.2.4 Quality control in PHP projects**
The standards outlined in Section 12.6.2.3. do not apply to projects that follow the People's Housing Process (PHP) route.   The PHP enables individuals, families or groups to take the initiative to organise the planning, design & building of, or to actually build, their own homes. PHP houses are therefore not covered by the NHBRC warranty scheme.

There is a lot of debate about the quality control measures and construction standards that should be used in PHP projects.  The issue is complex as very often the beneficiary household's assessment of quality differs from that of professionals.   Also, there is not always a clear link between satisfaction with the product and building quality.   The factors influencing the beneficiary households' perceptions of quality and satisfaction with the product are more complex than the narrow set of technical factors professionals use to assess quality.    Some of the factors that appear to influence beneficiaries' perceptions of quality are:

- The level of household involvement in decisions with regard to what is built and how.
- How the household prioritises its housing needs.  Particularly whether it attaches more importance to additional floor area more than good

quality construction.
- The construction quality of other houses in the area.
- How the quality of the new house compares with the house they were living in before.

In PHP projects the regulations need to be enabling rather than controlling and the persons charged with applying them should be flexible. Building inspectors should see their role as one of educating people about why it is best to do something a particular way and of helping them meet the quality standards as best they can; rather than as enforcers of rigid regulations. The Western Cape Provincial Housing Development Board have approved minimum standards for PHP projects, which document is available from the Provincial Department of Housing.

### 10.6.2.5 Building regulations

The building regulations applicable to the top structures will be influenced by the township establishment procedures adopted. If the Less Formal Township Establishment Act 113 of 1991(LFTE) (see 1.5.2.9) is utilised the regulations can be project specific and more flexible than the regulations that are conventionally applied by the local authority.

### 10.6.2.6 Identification of site boundaries and siting of the structure

This issue applies to projects where site boundaries have been surveyed. The experience of low-income housing projects has been that households frequently build or extend their structures across their site boundaries (see 10.3.4.1). This causes problems that are difficult and expensive to sort out at a later stage. It is critical that the beneficiaries are shown the corner pegs of their site as soon as they move onto the site. They should also be informed of the minimum rear, front and side space set backs that are necessary for healthy, safe living. Beneficiaries of attached and semi-detached housing must also be informed of any special requirements that pertain to such housing, such as for fire walls and the implications for making alterations and extensions. (see 7.2, 10.1 & 10.2)

### 10.6.2.7 Innovative housing products

There are numerous innovative house-building systems on the market. Only those products that have an 'Agrement Certificate' should be used. Some useful questions to ask when assessing the benefits of innovative housing options over conventional housing are:
- Do the beneficiaries approve of the product?
- What is the anticipated life span of the product?
- What equipment and skills are needed to erect and alter the house? Are they locally available? How easy is it to add on extra rooms or alter the house at a later stage?
- How extensively is the product marketed and for what period of time

will it be available?   What are the consequences of the product no longer being available?

- What are the maintenance implications / requirements?
- What are the short-term and long-term costs/ cost savings of the product?

### 10.6.2.8 Housing maintenance

The maintenance implications of different types of materials need to be taken into account when selecting building materials.   It is also advisable that homeowners are made aware of the advantages of regularly maintaining their house.

## 10.6.3 The Key Elements of a Formal Top Structure Delivery System

10.6.3.1        House plans and materials specifications

There are variety of ways the provision of house plans and materials specifications can be organised, for example:

- The developer could provide a standard set of house plans and material specifications.
- The developer could provide a standard set of house plans and allow the beneficiary to amend the plan to suit his/her needs.  This service could be provided at no cost or for an additional fee.
- The beneficiary could select a house type or builder/ contractor on the basis of show houses or houses they have built for other beneficiaries in the community.

The latter option usually works best as the beneficiaries are able to see what their house will look like.  Very often beneficiaries would like to make some amendments to the show house.  This may involve one or two changes to the plan for the show house/s that can easily be accommodated.  Offering a number of permutations of the show house/s can enhance beneficiary satisfaction with the top structure.

In low-income housing projects it is too costly to submit "as built" house plans.  A more appropriate solution is for the position of the house on the site to be depicted on a plan and for the standard house plan to be attached.

### 10.6.3.2 Construction options

The construction options that are typically used in the project types covered by the handbook are indicated below. The choice of option should depend upon what beneficiaries desire and what they are willing to contribute to the cost.

**Self - build**

The home owner builds the house with friends and family. This is the most frequently used method of informal house construction.

A small proportion of beneficiaries choose this option when formal housing is being built in a project. Self-build is usually associated with PHP projects

**Self managed**

The homeowner appoints a labour-only contractor to build the house and supplies the materials him/herself. Alternatively a small contractor (who supplies the labour and materials) is contracted to build the house.

This method is sometimes used in informal house construction. This method is commonly used in PHP projects where formal houses are built. This method is often used in situ upgrading projects where formal houses are built.

**Small & medium contractor option**

The developer appoints one or more small contractors to construct up to 50 houses. When these houses are completed the contractor may be appointed to build further houses. The contractor may take responsibility for supplying the materials or the developer may facilitate the setting up of a building materials depot on site. The contractor may or may not sub-contract elements of the work. This method is commonly used when formal housing is being built in small and medium size projects.

**Large contractor option**

The developer appoints a large contractor to build 300 - 2000+ houses. The contractor takes responsibility for all aspects of top structure construction. The contractor may or may not sub-contract elements of the work. Large contractors are most commonly used when formal houses are constructed on large green field sites

### 10.6.3.3 Material procurement systems

The appointment of one or more materials supplier could be done in one of the following ways:

- Suppliers could be asked to tender for supplying specified bricks and/or hardware for a specific time period.
- The developer/ contractor could call for prices against a schedule of materials and, if appropriate, for setting up a materials depot on site. The prices could be for the duration of the project. Within this system there is room to negotiate around prices.
- The developer/ contractor could call for prices for a specific time period and against a schedule of materials. One or more suppliers could then be accredited.
- Suppliers could be accredited on the basis of their proximity to the

project area.

- No supplier is accredited. Beneficiaries making use of the self-build or self managed option could be required to obtain a quote from the supplier before the project manager authorises the purchase of the materials.

**10.6.3.4 Materials ordering systems**

It is possible to identify a number of different approaches, the final selection of which will depend on the top structure delivery system adopted.   The approaches include:

- The beneficiary or the beneficiary and his/her builder ordering the materials directly from the supplier.   Each beneficiary is essentially provided with a building materials voucher that is exchangeable at the accredited supplier/s
- The beneficiary or the beneficiary and his/her builder could order materials through a site office or the housing support centre
- The contractor could order materials through the project's site office or a materials depot established on the site
- The contractor could order materials directly from one or more suppliers of his/her choosing.

**10.6.3.5 Accreditation and training of builders**

To protect the beneficiary from poor workmanship, particularly in PHP projects and projects which prioritise the use of local builders or small contractors, it is important that there is process of accrediting and training builders.

Accreditation is usually based on an assessment of the quality on the builder's building work and his/her track record in the project.

Training can take the form of informal on the job advice and/or structured workshops that deal with common mistakes made by the builders. Alternatively it could involve a structured training course by an accredited trainer followed up by on site support.

**10.6.4 Examples of Formal Top Structure Delivery Systems**

**10.6.4.1 Managing contract approach**

In this delivery system the developer/ local authority appoints a managing contractor to undertake all the responsibilities related to top structure construction.   The managing contractor takes responsibility for:

- The preparation of house plans and construction of show houses
- Ordering and supplying materials

- Employment and supervision of work teams and/ or sub-contractors. The sub-contractors could be small contractors who are able to build a house from start to finish or labour only contractors that are specialised in a specific component of house construction.
- Beneficiary administration (optional - this function could be performed by the local authority if appropriate)
- Provision of technical advice
- Quality monitoring
- Financial management

The managing contractor assumes all the risks associated with house construction.

This approach is often favoured by local authorities as most of the responsibilities and risks associated with top structure delivery are passed onto the managing contractor.   It is an approach that is suited to contracts that involve the construction of more than 300 top structures.   The approach can be used in in situ upgrading projects but it is most commonly used in green field projects.

The beneficiary's participation in the top structure construction process is very limited.  In some projects the beneficiary can select the house type that is built on his/her site in other projects a standard house type is built on all the sites.  Because the beneficiary is distanced from the house construction process the chance of s/he being dissatisfied with the quality of the top structure may be higher than in the PHP approach.   It is important that the local authority, with the assistance of the NHBRC, closely monitors the quality of house construction so that beneficiary dissatisfaction is kept to a minimum.

### 10.6.4.2 The small and medium contractor approach
In this approach to top structure delivery the functions of the managing contractor described above are split between the project manager and the small/medium contractors.

The project manager's roles could include:
- Facilitating the appointment of the small and/or medium contractors. The developer/ local authority will sign the agreement with the contractors.   An alternative option is for the local authority/ developer to accredit the contractors and for the beneficiary and his/her selected contractor to enter into an agreement re: the construction of a top structure on his/her site.
- Beneficiary administration
- Financial management of the project
- Facilitating the preparation of house plans.  S/he may not need to do this if the contractors supply their own plans
- Oversee the implementation of the project and monitor construction

quality.

The contractors are responsible for house plans (if not supplied by the project manager) the purchasing of materials and for constructing the top structures. They may or may not use sub-contractors.

In this delivery approach small contracts tend to be awarded and if the contractor performs well s/he is awarded another small contract.

This approach is suited to projects that emphasise the use of local skills and promote the involvement of previously disadvantaged groups. It is also suited to projects where less than 300 top structures are to be built. This does not mean that the approach can only be used in small projects. It can also be used in projects where a large number of top structures need to be built. The approach potentially gives the beneficiary a greater selection of house types to choose from.

If the developer appoints the contractor the beneficiary is distanced from the house construction process and there is a chance that s/he will be dissatisfied with the quality of the top structure. The risk of this happening is lower if the beneficiary decides which contractor s/he would like to use and directly contracts him/her to construct the top structure.

It is important that the local authority, with the assistance of the NHBRC, closely monitors the quality of house construction so that beneficiary dissatisfaction is kept to a minimum.

### 10.6.4.3 People's Housing Process (PHP)
The key features of the PHP approach are that:

- Decisions with regard to the design of the top structure delivery system are located at the community level
- Decisions with regard to the use of the subsidy are located at beneficiary level
- The top structure delivery system is flexible and accommodates a range of house types and construction options
- Top structure delivery is not just about house construction it is about community development
- The process may also be applied to the provision of infrastructure (although this is not addressed in this section).

Other principles, which are not mandatory but have contributed to the success of such projects, are:

- A flexible materials voucher system which can be exchanged at one

or more materials supplier
- A top structure delivery system designed, primarily, around local labour only builders
- A housing support centre which is responsible for beneficiary administration, materials ordering (optional), quality monitoring and oversees the implementation of the project.

This top structure delivery system tends to lead to high levels of community satisfaction with the top structure and lays the foundations for the ongoing consolidation of the top structure.   Its success depends on the factors shown overleaf (after the table):

| Roll-ov upgrad | New formal structu and possibl relocat inform structu | Subsid saving and micro loans. | NHBR if top structu are contrac built. PHDB guideli if PHP approa is used. | Depen on the townsh approv proced used | Home owner with support of friends and family. Local labour only builders. Small, medium and large contractor | Managing contract approach. Small & medium contractor approach. PHP approach (in a limited no of cases) |
|---|---|---|---|---|---|---|
| In Situ Upgra | New formal structu and existin inform structu | Subsid saving and micro-l | NHBR if top structu are contrac built. PHDB guideli if PHP approa is used | As specifi in townsh approv | Homeown with support of friends and family. Local labour-onl builders. Small and medium contractor | Managing contract approach. Small & medium contractor approach. PHP approach in a limited no. of cases. |
| Mange Land Settle | Inform Structu | Saving and possibl micro-l | None/ | As specifi in townsh approv | Home owner with support of friends and family Local labour-onl builders | Not applicable |
| Emerg Servic | Inform structu | Saving | None/ | None/ | Home owner with support of friends and family Local labour-onl builders | Not applicable |
| Basic Infrastr | Inform structu | Saving | None/ | None/ | Home owner with | Not applicable |

| | Likely Top Structu | Source of top-str financ | Buildin regulati | Town planni regulat | Who builds | Likely formal top structure delivery system |
|---|---|---|---|---|---|---|
| | | | | | support of friends and family Local labour-onl builders | |

**Table 10A.   The relationship between project type and the top structure delivery process**

(See 10.6.2.2).

- The existence of an accountable, well organised community based organisation (CBO)
- Technical support and advice being provided to the CBO, Housing Support Centre staff, beneficiaries and builders

A proportion of the beneficiaries being resident in or near the project area at the start of the project.   It is therefore particularly suited to in situ upgrading and certain roll over upgrading projects.

A sound, efficiently managed materials supply and financial management system.

A construction quality monitoring system which, at minimum, is based on ad hoc inspections and at best building milestone inspections at, for example, foundation, slab, wall and roof completion stage. Adequately trained Housing Support Centre staff, the technical support organisation and/or the local authority's housing advisor/ inspector could be responsible for the inspections.

# 10.7  SCHOOLS

The Western Cape Education Department is responsible for the education of all school-going learners and endeavours to provide school buildings, subject to the availability of finance, as near as possible to their place of residence.

Prerequisites for the building of a school include sufficient potential learners, sufficient land and the availability of sufficient capital and operating funds.

# 10.8  COMMUNITY FACILITIES - clinics, halls, playgrounds, libraries, sports facilities

Depending upon the size of the settlement, these facilities could be placed either within the settlement or within an adjacent community. Any such project within the settlement should be planned and implemented as an improvement project as described in this Handbook. If a project were located in adjacent community the standards and procedures normally used in the urban area would be applied, but it is usually inappropriate to apply conventional standards in the provision of facilities within informal settlements.

## 10.9  RELOCATION OF DWELLINGS

The situation may arise where it is essential that one or more dwellings be moved. They may be in the way of something (*e.g.* future road or railway), or be dangerously or illegally located.

Because people are sensitive about moving their homes care must always be taken to explain the reason for moving and the proposed process - and to provide the opportunity for discussion of any realistic alternatives. The support of community leadership would be a major asset in such cases. The leadership should be informed of the full circumstances and given the opportunity to visit the proposed relocation site. If it is not possible to negotiate a relocation legal steps will be required.

An agreement about relocation may include the provision of assistance by the local authority - such as transport or materials, but care must be taken not to set precedents.

A local authority should develop standard principles and procedures for such eventualities, and apply them when structures are erected in unsuitable places such as vleis, flood plains and environmentally sensitive areas. All relocations must make it clear that all the residents of a dwelling, including lodgers, are required to relocate.

Think strategically about the timing of relocations in in-situ upgrading to ensure that disruption to households is minimised and that the vacated areas can be effectively secured.

## 10.10 FINANCE

### 10.10.1 SOURCES OF PROJECT FINANCE

#### 10.10.1.1 Housing Subsidies
The subsidies provided by the Department of Housing will probably provide

the main source of funding for informal settlement upgrades. These are comprehensively described in the "Housing Code" published by the national Department of Housing.

However, it may be necessary to acquire funds from additional sources. This is primarily because subsidy funds can only be granted to qualifying beneficiaries, i.e. those who comply with certain eligibility criteria. There is a distinct possibility that one or more of the inhabitants of informal settlements would not qualify in terms of these criteria (they may have been previously assisted with a housing subsidy, etc.)

## Eligibility

Housing subsidies can be accessed for persons who are: -

**Married or have Financial Dependents**: He or she must either be married (in terms of the Civil Law or in terms of a Customary Union) or habitually cohabiting with any other person, or have proven financial dependents. (The word "spouse" includes any partner with whom a prospective beneficiary under the Scheme habitually cohabits.) This criterion does not apply to disabled persons.

**Resident**: He or she is lawfully resident in South Africa (i.e. citizen of the Re public of South Africa or in possession of a permanent resident permit).

**Competent to contract**: He or she is legally competent to contract (i.e. over 21 years of age or married or divorced and of sound mind).

**Have a limited household income:** The gross monthly household income of his or her household does not exceed R3 500.00. A prospective beneficiary will be required to submit adequate proof of income, and, in the case of income received through self-employment, must sign an affidavit stating the amount earned.

**First time funded:** Neither that person nor his or her spouse has previously derived benefits from the housing subsidy scheme, or any other state funded or assisted housing subsidy scheme which conferred benefits of ownership, leasehold or deed of grant or the right to convert the title obtained to either ownership, leasehold or deed of grant, with the exception of the consolidation subsidy, and relocation grant. This criterion is also not applicable to persons who qualify for relocation assistance or disabled persons. In the event of a divorce, the terms of the divorce order will determine a beneficiary's eligibility.

**First time property owners:** He or she is acquiring property for the first time, except in the case of a consolidation subsidy, and relocation assistance. This criterion does not apply to disabled persons.

**Housing Subsidy Amounts**

The following table shows the subsidy amounts for which beneficiaries may qualify.  Please note that the income refers to the gross household income, that is, gross income of both applicant and spouse.

| Income Category (per month) | Subsidy Amount |
| --- | --- |
| R0 to R1 500 | R20 300,00 |
| R1 501 to R2 500 | R12 700,00 |
| R2 501 to R3 500 | R7 000,00 |
| Old Aged, disabled, health stricken | R22 800,00 |
| Institutional Subsidies R0 to R3 500 per month | R20 300,00 |

A premium of up to 15% may be awarded where geotechnical conditions are such to inflate the cost of constructing services and/or houses. Furthermore, a premium is available in the Southern Cape condensation area, which must be used to finance prescribed elements of the construction that will address condensation issues.

**Beneficiary's Contribution** It is essential to note that, with the exception of those participating in the People's Housing Process, qualifying beneficiaries will be required to make a financial contribution of R2 479,00 *per* household before civil infrastructure is installed.

**Emergency Funds**
Each provincial department is also required by law to reserve 0,5% to 0,75% of its total budget for emergency housing. If no provision was made for the financing of the relevant upgrading from funds allocated to the municipality and the upgrading is of a critical nature (due to flooding or any other health hazard), the provincial Department of Housing can be approached to provide financial assistance from its emergency fund.

**10.10.1.2 Consolidated Municipal Infrastructure Programme (CMIP)**
CMIP makes available capital grants to Municipalities to provide services and facilities such as water, roads, storm water, solid waste disposal, community lighting, clinics, cemeteries and multi-purpose community and sports facilities to needy South Africans.  However, each Municipality, in consultation with the beneficiary community and as part of the IDP process, must determine the package of services to be provided, as well as the level of services.  CMIP funds can be counter funded with local council or private sector funds to provide higher levels of service, on condition that it is affordable to the community.  In fact, the use of CMIP funds as "seed capital" is promoted and recommended.

An amount of up to R3, 000.00 per site will be made available per low-income household for urban areas, that is households with an income of

less than R3, 500.00 a month.

In rural areas, where there are no housing programmes in place that can provide internal services, an amount of up to R7, 000.00 per household will be made available for bulk, connector and internal services as well as community services and facilities. If a housing subsidy is approved later for a rural area, which has already benefited from the CMIP programme in respect of internal services, an amount of up to R4, 000.00 will be deducted from the housing subsidy.

### 10.10.1.3 The Human Settlement Re-Development Programme

The Human Settlement Redevelopment Programme focuses on improving the quality of the urban environment by addressing the legacy of dysfunctionality in human settlements. It does this by:

- Identifying and addressing the nature and underlying reasons for dysfunctionality.
- Providing a source of funding to correct such dysfunctionality and act as catalyst to gear other sources.
- Co-ordinating sources of development funding to ensure holistic development.
- Adding value to projects, which are funded through other processes and programmes.

Typical projects are planning studies, communal facilities, upgrading of public spaces and measures to improve community safety and security.

### 10.10.1.4 Department of Land Affairs

The Department of Land Affairs has the exclusive responsibility to fund tenure upgrade projects where the residents have ESTA (Extension of Security of Tenure Act 62/1997) rights, that is, where the residents occupy land that falls outside of a proclaimed township (such as Agriculture and Forestry).

The Department of Land Affairs and the Department of Housing have a dual responsibility to fund in-situ tenure upgrading projects where service provision and top-structures are required. The Department of Land Affairs will fund the cost for land acquisition. The balance of the costs will have to be funded by the Department of Housing. Please note that the land tenure costs as provided by the Department of Land Affairs, will be deducted from the subsidy amount provided by the Department of Housing so as to ensure that double subsidisation does not occur.

### 10.10.1.5 Municipal Funds

Section 15(5) of the Housing Act, 1997, Act No 107 of 1997 requires that municipalities establish a separate operating account for housing into which the net proceeds of the sale and rental of property as well as any

funds to the credit of the Community Facility Account, Rental Reserve and Maintenance and Renewal fund should be deposited.

Funds from the Separate Operating Account may be used to finance housing development projects consistent with the national and provincial housing policy. It is important to note that the approval of the Provincial Housing MEC is required before funds can be utilised.

Alternately, municipalities may resolve to utilise funds from their own capital budget to finance the cost of the upgrading should they so desire.

**10.10.1.6 Development Bank of South Africa (DBSA)**
The Development Bank of South Africa provides loans to municipalities to finance infrastructure costs. The repayment period is flexible and there are three alternatives in terms of interest rates, namely fixed, floating or one linked to prime overdraft interest rates. DBSA also offers a grace period exempting borrowers from capital repayment during the construction phase of the project.

## 10.10.2 SOURCES OF BRIDGING FINANCE

**10.10.2.1 Development Bank of South Africa (DBSA)**

**Bridging Finance For The Provision of Infrastructure** (refer to 10.10.1.6)

The repayment of such loans can be scheduled so that they are redeemed in full once the subsidy funds from the Department of Housing become available.

**Bridging Finance for Top-Structures**
It is important to note that DBSA will only provide bridging finance for top-structures until such time as subsidy funding becomes available from the Department of Housing.

**10.10.2.2 Commercial Banks**
Municipalities can apply for loans from commercial banks to finance the capital cost of development as a bridging mechanism until funds become available either from the Department of Housing or another source. Such application must be tabled before the Housing Portfolio Committee, Finance Committee and Executive Committee of Council for approval. The resolution by council to obtain a loan should specify the amount of the loan, the purpose, redemption conditions, discount (if any), the interest rate applicable, the source and special conditions.

If banks require security for bridging loans application can be made to NURCHA for a guarantee to be provided to the bank. NURCHA (national Urban Reconstruction and Housing Agency) was established by the state to facilitate the financing of housing. It can be contacted at 011 402 4780, or info@nurcha.org.za

It might also be necessary to facilitate the granting of personal loans to individuals participating in the upgrade who would not qualify for subsidies from the Department of Housing or whose subsidies are insufficient to provide for the cost of upgrading. This must be discussed in detail during the facilitation process so as to obtain consensus from the residents. The extent to which this remains a viable option would depend on levels of affordability, employment records and repayments required.

### 10.10.2.3 Municipal Funds

Municipalities may resolve to utilise their own funding in order to fund the cost of the development or, alternatively, as bridging finance for the development until such time as funding from the Department of Housing becomes available. As already mentioned there is the distinct possibility that one or more of the residents of the informal settlement would not qualify for a housing subsidy and alternative sources of funding for these individuals would be required.

## 10.10.3 PROCEDURES FOR ACQUIRING FINANCE

### 10.10.3.1 Housing Subsidies

The Western Cape Department of Housing allocates funding to various municipalities in advance in order to finance housing development. Currently municipalities are allocated budgets for a three-year period so as to enable them to plan housing development well in advance. It is, therefore, critical that the improvement project be reflected in the business plan of the municipality for the specific financial year(s). Once this has occurred, the municipality can submit the detailed project application to the Provincial Department of Housing for approval by the relevant structures. Due to the nature of in-situ upgrades, the subsidy programmes, tenure options and payment milestones as per the Housing Code may not provide the perfect fit for the proposed upgrade. It is important that the matter be discussed with the housing department so that realistic milestone payments and a suitable tenure option can be determined.

### Housing Subsidies: Emergency Funds

Applications for the use of emergency funds for projects that are of a critical nature (due to flooding or any other health hazard), must be submitted to the provincial Department of Housing. The applications

should include details as to quantum of funds required, the scope of the work to be performed, the nature of the emergency and the process to be followed in respect of the work to be done.

**10.10.3.2 CMIP**

Applications for CMIP funding may be submitted by Category B Municipalities to their District Municipalities.  The District Municipalities are responsible for consulting with all their Category B Municipalities regarding the infrastructure priorities for their district.  The District Municipality will then submit a project shortlist to the CMIP Provincial Programme Manager for approval.  The exceptions to this procedure are the Municipalities of Drakenstein, George and Stellenbosch together with the City of Cape Town who have their own CMIP allocations.  These Municipalities will prioritise their own projects and submit their project shortlist to the CMIP Provincial Programme Manager for approval.

The next stage is for the applicant to prepare a CMIP business plan for the short-listed project.  Both the CMIP Provincial and National Programme Managers review project business plans.  Projects that comply with the CMIP criteria will receive a CMIP funding recommendation subject to certain conditions.  The District Municipality is responsible for notifying the Category B Municipality of the project's CMIP allocation.

**10.10.3.3 The Human Settlement Re-development Programme**

The Western Cape Province receives a budget of R13 million per annum of which approximately two-thirds is allocated to the City of Cape Town.

Invitations are sent out annually to all local and district municipalities describing the type of projects that could qualify as well as the format the business plans should take. Applications are only accepted from local and district municipalities and no applications are considered from individuals, non-government organizations or other private organizations.

**10.10.3.4 Department of Land Affairs**

Application for the approval of the Department of Land Affairs to fund tenure upgrade projects where the residents have ESTA rights, that is, where the residents occupy land that falls outside of a proclaimed township (such as Agriculture and Forestry) must be made directly to that department.

Where The Department of Land Affairs and the Department of Housing have a dual responsibility to fund improvement projects, that is, where tenure upgrade, service provision and top-structures are to be provided, the project proposal must be submitted to both Departments. The

Department of Land Affairs will consider the funding of the land acquisition costs in respect of the development. The balance of the costs will be considered by the Department of Housing. Please note that the land tenure costs as provided by the Department of Land Affairs, will be deducted from the subsidy amount provided by the Department of Housing so as to ensure that double subsidisation does not occur.

**10.10.3.5 Development Bank of South Africa**

If DBSA funding is to be contemplated, it is recommended that a brief summary proposal be sent to the Bank, for the purposes of providing a basis for discussion. In such discussions DBSA personnel will advise on how the project can be designed to be acceptable to the Bank and be of optimum advantage to the Developer.

**10.10.3.6 Commercial banks**

Municipalities may negotiate with commercial banks for a loan to be granted in order to finance the cost of upgrading. The loans could either serve as bridging finance until subsidy funds from the Department of Housing become available or as a long-term loan to the municipality to meet costs not borne by housing subsidies. As previously mentioned, loans from commercial banks to finance the capital cost of development must be tabled before the Housing Portfolio Committee, Finance Committee and Executive Committee of Council for approval.

**10.10.3.7 MUNICIPAL FUNDS**

**Separate Operating Account**

The project application should be submitted to the Provincial MEC for Housing via the Department for approval. The application should include audited statements of the Separate Operating Account or written confirmation from the Financial Director of the balance of funds in the account.

**Municipal funds**

The application for funding of the in-situ upgrading from municipal funds must be submitted to the Housing Portfolio Committee, the Finance Committee, Exco members and the Executive Committee of Council for approval.

**10.10.4 THE FINANCING OF IN SITU UPGRADE PROJECTS**

Due to the nature of in-situ upgrades, the subsidy programmes, tenure options and payment milestones as per the Housing Code may not provide the perfect fit for the proposed upgrade. It is important that the matter be discussed with the housing department so that realistic milestone payments and a suitable tenure option can be determined.

## 10.11 LAND FOR DEVELOPMENT

### 10.11.1  Obtaining the Right to Develop Land
The right to develop a parcel of land is becoming increasingly complex and constrained by various legal processes. However even before these rights are sought, an earlier step is fundamental. This is :- the choice of a particular parcel of land to develop, and the decision to start the processes to obtain development rights.

It is important to be quite clear at the start about what one hopes to achieve.

The decisions to be made include the following : -

- Is that piece of land the best available for the purpose? (new housing or upgrading)
- Does the land have visible environmental or ground condition constraints?
- Are there slope or potential flooding problems?
- Are there rock outcrops? (then the laying of services could be very expensive).
- Are there servitudes or mining rights on the land ?
- Is the zoning appropriate? Could it lapse in the near future?
- Does the land have major (building) improvements?
- Are there bulk services near the site (up to the boundary)?
- Are major earthworks required before the site can be used?
- Are there likely to be major objections from the (existing) neighbours to a rezoning proposal?

The decision to proceed with obtaining the rights to the land should only be taken if satisfactory responses can be made to the questions above.

### 10.11.2 Options Available
There are various options available to acquire the right to use land.

#### 10.11.2.1 Purchase
While this requires a willing buyer and seller, the price may be too high for accommodating families in the 0 - R3 500 category. The Housing Subsidy provides only a limited amount for the acquisition of land.

If the local authority does not already own land it will have to call for tenders for the purchase of land. In certain situations it may be wise for the purchase of an area of land to be made conditional on the approval of re-zoning.

#### 10.11.2.2 Expropriation

Where the municipality is unable to purchase that land on reasonable terms through the negotiation with the owner thereof (eg a deceased estate) the route of expropriation may be necessary.

**10.11.2.3 Land Exchange**

In some cases it may be of mutual benefit for the two parties to reach agreement on a land swap. Where the land is of similar value per ha, this would probably be the exchange of similar areas.

However where the two pieces of land have considerably different values per ha, the swap would be based on different land areas being exchanged, so that each party kept the same total land value in their portfolios ie R250 000/ha x 4ha = R50 000/ha x20ha.

**10.11.2.4 Land Availability Agreement**

In order to simplify the sale of individual erven to the ultimate beneficiaries, it is possible for a land availability agreement to be signed by the seller giving the buyer (local authority) the right to deal with the land as though it were owned by the local authority. Only after the negotiations with beneficiaries are completed, the zoning and subdivision approved and acted upon, will individuals move onto their erven and title can then be given.

A local authority may enable a private developer to access municipal land by means of a land availability agreement, and for the private developer to then undertake the project in terms of a range of conditions set out by the local authority in the agreement.

## 10.12 BENEFICIARY IDENTIFICATION

As a result of the tension between supply and demand, the allocation of housing resources has tended to be a very challenging experience. Invariably there are more people residing in informal settlements who need houses than can be accommodated in current projects. It is therefore imperative that the rules and procedures for beneficiary identification and the allocation of sites are agreed with the local leadership and the affected community long before the project reaches maturity.

Failure to address this may result in conflict within the community. The disgruntled sections of the community may stage disruptive protest activity to stop the development until their grievances are attended to. In other instances they could invade the land that is being developed. It is

therefore essential to put in place principles for beneficiary identification that are not only fair but which also place the process of allocating sites beyond reproach.

Some towns and cities have a waiting list and a policy of identifying and prioritizing beneficiaries. If this is not so the following applies:

### 10.12.1 Principles for Prioritising Applicants for Housing

- **Length of residence**
  Priority may be given to people who have lived in the area the longest. This principle is often used to pre-empt any suspicions of queue jumping and corruption. The history of the establishment of the informal settlement is also taken into account. This principle has been successfully applied in several informal settlements. This principle may be extended to accommodate the potential beneficiary's age, state of health and the number of their dependents.

- **Circumstance**
  Some informal settlement areas are unsuitable for residential purposes. For example, during the winter months such areas may become prone to flooding, which may subject families to intolerable living conditions. The flooding may affect a certain portion of the community, prompting consensus in the general public to alleviate the suffering of the adversely affected residents by prioritising them during the compilation of a list of beneficiaries.

### 10.12.2 Procedure for identifying beneficiaries

Most informal settlements have well-kept population registers which usually date back to the time the settlement was established. These registers would have the name, surname and identity number, the address of each resident and their year of arrival in the area. Keeping these details in a safe and secure place ensures, for example,  that a resident who only arrived in 1999 does not get a house ahead of a resident who moved in 1978. In the case where the development of an area inhabited by 1000 families will produce only 300 sites, it is always advisable to apply the principle that recognises the potential beneficiary's length of residence. This pre-qualification threshold can always be raised if most of the residents arrived in the area during the same period.

Another vital record that has a place in beneficiary identification is the survey and numbering of dwellings (see 4.3, 7.1.1.2)

The project committee or residents' committee should nominate members within their ranks to form a beneficiary identification committee. This committee of, say, 4 members, would oversee the beneficiary identification exercise. It would also play a key role in dispute resolution and adjudication of grievances. At the public meeting where the committee would be introduced, the local leadership would propose principles and the procedure to be used. The general public should be asked to endorse the principles and procedures before the task of identifying the beneficiaries can commence.

The site allocation committee may enlist the help of local volunteers to conduct a door to door registration of beneficiaries. Alternatively, the community may agree on a central registration point. In both cases potential beneficiaries should make available all the documentation required by the housing policy to demonstrate their eligibility. A special questionnaire would be used to capture as much detail about the potential beneficiary as possible.

### 10.12.3 Safeguards

Once completed, these questionnaires would be converted into a list of names with identity document numbers and addresses. This list should then be verified against the community register and then copied onto A3 size paper sheets and posted in public places like spaza shops, clinics and community halls. This is done to allow the public to ascertain that all the people listed are bona fide residents of the area. Concurrent with this process would be the reading out of the lists at public meetings.

A seven day return period should be allowed during which grievances may be forwarded to the site allocation committee and addressed. Although grievances may be focused on the omission of some more deserving residents, a significant percentage would involve discrepancies in the ownership of a shack. Family feuding may also take centre stage with siblings fighting over who the true owner of the shack should be.

### 10.12.4 Procedure for dealing with non-qualifiers

Although applicants for housing subsidies are encouraged to declare any prior ownership of property, they do not. As a result the national housing database identifies them to have owned state-aided housing and they are immediately disqualified. These people would then be encouraged by the local leadership to seek alternative accommodation elsewhere. In most cases they move in with another family as a rent-paying backyard shack dweller. In some isolated cases, such people relocate to other areas where they continue to live as lodgers in other people's backyards.

### 10.12.5  Options for families affected by de-densifying

The local authority may need to establish a temporary settlement area with basic infrastructure for the affected families. Transit camps are notorious for being unruly and difficult to manage. The local authority can counter this negative trend by assuring the affected families that they will all be able to access serviced plots in an area to be developed for permanent settlement. The families should all be listed and allocated to well defined temporary plots. These plots should have plot numbers which may later be used as addresses. The onus to police the transit settlement should be shared equally between the local authority and the residents.

# 10.13 ALLOCATION & SALES ADMINISTRATION

### 10.13.1 Allocation policy

A policy should be established to decide whether beneficiaries will be housed in neighbourhoods that relate to the neighbourhoods that they are leaving, or whether they should be dispersed within the new project.

The advantage of keeping a community together is that the existing relationships can help enormously to create a viable community in a new project.

However, if the community was geographically divided into hostile camps a good case can be made for re-distributing the community within the new project, in the hope that people will learn to live peacefully together, rather than to retain old grudges.

### 10.13.2  Procedures

It is usually helpful to remember that Beneficiary Identification is a separate process from Allocation. Beneficiary Identification produces a list of potential beneficiaries from the community. The Allocation process begins with receipt of the list, goes through a range of procedures listed below, and ends with the allocation and occupation of a property to each qualifying person.

The procedures are:
1)      Receipt of list of potential beneficiaries from a community structure (see 10.12.2)
2)      Local authority endorses that the list has been properly compiled.
3)      Potential beneficiaries are sent invitations to attend a workshop

at which they are informed about the nature of the project, the project schedule/programme, the opportunities available to them and the conditions attached to that (including any financial contribution to be made by the beneficiary), and the requirements of the national Housing Subsidy policy, if that is how the project is being financed. In their invitations they must be told to bring:

- Identity documents for the head of household & spouse/partner (if any)
- In the case of applicants who are, or have been, married: marriage certificate and, if relevant, divorce and/or death certificates
- Birth or baptism certificates of dependents
- Latest pay notification or proof of income (for both beneficiaries)

At the end of the workshop applicants who are eligible to apply for a housing subsidy are invited to complete a housing subsidy application form, to which copies of the documents are attached. Persons with incomplete documentation are required to bring the missing documents before their application can be processed.

4) Housing subsidy application forms, with attached documents, are submitted to the Provincial Housing Department for approval. Each application must relate to a specific erf number.

5) Consideration of the subsidy application by the Department includes a check of the national data base and the records of the Deeds Office to ensure that the applicant has not previously owned property and/or has not previously benefited from government-subsidised housing aid of any kind and is eligible to receive a subsidy. The Department advises the project developer (in most cases the local authority) which applications have been approved and the size of each subsidy.

6) Approved applicants are sent a letter informing them of the subsidy approval, and any contribution or shortfall of the cost of the property that they must pay themselves (in cash, prior to occupation), and inviting them to a workshop where they will learn more about property ownership, be allocated a specific site and house type, sign a Deed of Sale and be given either immediate occupation of the property, or an approximate date of completion of the specific house if the house is still to be constructed.

7) The Deed of Sale and a copy of the identity document is then submitted to a conveyancer for transfer.

8) When transfer has been passed and the ownership of the property registered in the beneficiary's name the Deeds Office issues a Title Deed, which must then be given to the beneficiary. The local authority may wish to keep copies of the Title Deeds as

part of its records.

NB - The provisions and procedures related to the national Housing Subsidy Policy change from time to time. Be sure to keep up to date with the latest requirements of the Provincial Housing Department, especially on issues such as requirement of beneficiaries to make financial contributions.

### 10.13.3 Administration requirements

The administration of property allocation and sales must be properly and efficiently organised to be effective. At the heart of it must be a communication exercise that enables the community and each potential beneficiary to be very well informed about the project and what it offers. The workshops must be well managed and the invitations must be completely understandable. Verbal communication must be in the home language of the applicants. The administration process must ensure that subsidy applications are correctly completed and that there is no documentation missing. Breakdowns in administration will cause huge frustration to the community and to the project management team.

### 10.13.4 Pitfalls to be avoided

Ensure that this administration function is properly designed, managed and constantly supervised. There is a danger that inadequately trained and experienced people are employed in these functions - and are inadequately managed. Errors can be costly, can disrupt the whole development process, and can spoil the relationship between the community and the local authority.

Ensure that adequate proof is obtained that any dependants claimed by applicants are in fact *bona fide* dependants. Computer checks should be done regularly to ensure that beneficiaries do not "rent a child" or otherwise "borrow" or "invent" dependants for the purposes of getting their subsidies approved.

Ensure the integrity of the process. This means making sure that the subsidy application process is properly done and that the person who is awarded the subsidy receives the property. The process can fail if people are dishonest / corrupt. When someone has received transfer/ownership of a property it requires legal action to reverse it, which is complicated and expensive. Systems and procedures should be constantly monitored and checked.

Ensure that houses are occupied immediately after completion to prevent illegal occupation of dwellings. For this purpose lines of communication with beneficiaries should be well established and the beneficiary must take co-responsibility for the safeguarding of dwellings against illegal occupations.

## 10.14   COMMUNICATION

It is vital to establish a comprehensive communication strategy for any project or programme. The essential components of such a strategy are indicated below:

### 10.14.1   The audience

Who needs to be informed? All the parties need to be informed about each others' perspectives, about the project objectives and progress, and about kinds of issues that should be thought and talked about. Identify all the groups and individuals who must be covered by the strategy.

### 10.14.2   The message

Always clearly define the message that must be transmitted. Put in writing so that everyone carries the same message.  On the other hand, remember that a significant part of your audience may be illiterate! The message that has to be communicated should be targeted and clear. The message should be in a format or language that every one understands. The audience should be afforded the opportunity to seek clarity by asking questions. It is not unusual for people who have not properly understood a message to distort it and spread malicious rumours.

### 10.14.3   The media / Creating an appropriate strategy

There are many forms of media that could be used to disseminate information. It is important to choose the most effective and appropriate medium for a particular communication need. The main medium is likely to be the Project Committee meeting. Project committees carry the mandate of the broader community at discussions around the development process. The community therefore maintains regular contact with the project via regular report back sessions with the committee.

Public meetings must be timed to be optimally accessible to the community, must be well publicised and have a clear purpose and agenda.

Considering the low literacy levels within informal settlements, the use of local and indigenous language radio stations may be appropriate. Some radio stations boast very high listenership ratings within poor communities.

Brief information leaflets/flyers may be compiled and distributed as a means to convey a specific message to the community. These leaflets should also be in a language that most of the intended audience are conversant in. For effective distribution, they should be placed at public venues such as spaza shops, clinics and community halls. They should also be placed at public notice boards. Community newspapers, where they exist, can be another valuable medium.

## 4      Dealing with the press

The local authority should appoint one person to deal with the press. This is to ensure that the material that the media publishes is in line with the policies of the local authority and with the policies of the local authority. The spokesperson should update the information at his /her disposal on an ongoing basis by contacting the relevant role players in the project.

(See 2.2.4)