

DESIGN OPTIONS

AND

DELIVERY MODELS

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The Development Action Group (DAG) was established in 1986 and works with poor communities in urban areas of the Western Cape on housing and development issues. DAG's core activities are the facilitation of integrated development projects that promote habitable environments and sustainable livelihoods, development education to empower community organisations and other practitioners, and undertaking research, advocacy and lobbying to influence policy and practice.

The Urban Sector Network (USN) is a national association of South African NGOs involved in development and governance issues. The affiliates of the USN are: Afesis-Corplan (East London), Built Environment Support Group (Durban and Pietermaritzburg), Cope Housing Association (Johannesburg), Development Action Group (Cape Town), Foundation for Contemporary Research (Cape Town), Planact (Johannesburg) and Urban Services Group (Port Elizabeth).

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GLOSSARY

Administration Boards: The bodies responsible for administering African townships (including hostels) up until 1983, when “Black Local Authorities” were briefly formed before being merged into the new democratic non-racial local authorities in 1995-1996.

AGM: Annual General Meeting

Communal Property Association (CPA): a communal tenure body formed in terms of the Communal Property Associations Act of 1996; similar to a co-operative.

Co-operative: an internationally used form of communal tenure body; in South Africa, co-operatives are formed in terms of the Co-operatives Act of 1981.

DAG: Development Action Group

Grey sector hostel: A hostel built by an employer on public sector land (e.g. land leased from the Administration Boards).

Hostel: An administrative term referring to hostel accommodation that is managed as an entity, ranging from a single building or complex to a number of buildings over a wide area. Hostels can range enormously in size, from less than 20 residents to more than 10 000 residents.

Hostel block: A building with hostel accommodation. Can range in size from a single storey building with a few rooms to a multi-storey building with dozens of rooms, typically with between two and six people per room.

Hostel unit: A number of rooms sharing the same ablution and cooking facilities. A hostel block can consist of more than one unit.

Hostels redevelopment grant: A capital subsidy amount, in terms of the Public Sector Hostels Redevelopment Programme, of R20 300 for converting public sector hostels to family units or R 5 075 per bed space for converting hostels for single person accommodation (2002/2003 values).

Housing Association: A term commonly used for non-profit housing institutions with a form of tenure other than communal ownership, i.e. rental, rent-to-own or instalment sale.

Institutional subsidy: A subsidy amount, in terms of the Housing Subsidy Scheme, for the provision of institutional housing - can be used for converting grey sector or private sector hostels to institutional housing (e.g. a co-operative, Communal Property Association or Housing Association).

NGO: non governmental organisation (i.e. a non-profit development organisation).

Private sector hostel: A hostel built by an employer on land they own, e.g. mine hostels, hostels in harbour areas and hostels in industrial areas.

Section 21 Company: A non-profit organisation registered in terms of Section 21 of the Companies Act of 1973.

Sectional Title: A combination of individual ownership of individual units and joint ownership of communal property, as per the Sectional Titles Act of 1986.

Share Block Company: A communal tenure body formed in terms of the Share Block Control Act of 1980.

DESIGN OPTIONS AND DELIVERY MODELS FOR HOSTELS REDEVELOPMENT

1. Introduction

Hostels are the physical manifestation of the systematic racial discrimination and economic exploitation of the past. Largely invisible to the general public, hostels are home to several hundred thousand people across the country. The White Paper on Housing (1994) estimated that over 400 000 households (5% of all households in South Africa) lived in private sector, grey sector (privately owned hostels constructed on land leased from the state) and public sector hostel accommodation.

The national policy towards hostels outlined in the White Paper was aimed at the “upgrading and redevelopment of hostels in order to create sustainable humane living conditions in State and privately owned hostels countrywide and to ensure the re-integration of these hostel communities into the surrounding communities”. Although progress has been made with regard to the redevelopment of public sector hostels, the redevelopment of private sector and grey sector hostels (except for the big mine hostels) has lagged behind. The reasons for this are that whereas provincial housing departments have been responsible for co-ordinating public sector hostels redevelopment, and there has been a dedicated funding stream set aside for this, there has been no overall co-ordination of grey sector and private sector hostels redevelopment, and proposed redevelopment projects have had to compete with other housing projects for funding.

This report provides an overview of design and tenure options for hostels redevelopment, with an emphasis on grey sector and private sector hostels, where there is not a lot of precedent. The report discusses key issues arising from actual experience in hostels redevelopment. In 1999, the Development Action Group (DAG) was involved in a survey of grey sector hostels in Cape Town, and subsequently DAG co-operated with the City of Cape Town on the redevelopment of two grey sector hostels (Bokomo in Nyanga and Martin and East in Guguletu) and became involved in the redevelopment of the private Everite Hostel. Although many of the lessons are based on involvement with the grey sector hostels in Cape Town, experiences from hostels redevelopment elsewhere, especially in KwaZulu-Natal, have also been used.

First of all, current hostel designs and conditions are looked at. The options for redevelopment are then looked at, using three archetypical case studies. Next, some design principles for hostels redevelopment are proposed. The funding options for the capital costs of hostels redevelopment are then looked at, followed by a brief discussion of some issues relating to delivery options. Finally, some conclusions are drawn.

2. Current hostel design and conditions

There are a variety of different types of hostels throughout the country. While KwaZulu-Natal is characterized by large public sector hostels and Gauteng by

large mine hostels, Cape Town has a large number of small grey sector hostels, which makes redevelopment particularly complicated.

By the early 1980s there were almost a thousand hostel blocks in the three African townships of Cape Town, varying from small hostels with 20 bed spaces to a few larger hostels with over 100 bed spaces. The average hostel had 30-40 beds.

Table 1: Hostels in Cape Town (1983)

Area	Public	Private	Total
Langa	353	40	393
Nyanga	126	209	335
Guguletu	172	90	262
Total	651	339	990

Source: WCDHA, 1987

Table 2: Public sector hostels in South Africa

Province	Number of hostels	Number of residents
Eastern Cape	5	5 755
Free State	20	11 293
Gauteng	45	157 200
KwaZulu-Natal	25	66 856
Limpopo	13	1 244
Mpumalanga	25	16 000
Northern Cape	0	0
North West	13	9 985
Western Cape	10	11 000
Total	156	279 333

Source: Department of Housing, 2001

Table 3: Grey sector hostels in Cape Town

Area	Number of hostels	Number of residents
Langa	9	1 477
Guguletu	21	3 890
Nyanga	72	4 487
Total	102	9 854

Source: DAG, 1999

Hostel types range from large multi-storey complexes to small single storey blocks, but all hostels generally consist of the following components:

- Living space (bed, storage space)
- Kitchen space (kitchen sink, space for cooking and eating)
- Ablution facilities (toilets, showers, wash hand basins)
- Laundry facilities (wash troughs)
- Outdoor space: washing lines, parking area, etc.

Living space ranges from rooms with single bed spaces up to 16-bed dormitories. The trend has been for gradual dedensification, in line with the

National Building Regulations standard of a minimum of 5m² of habitable floorspace per hostel resident. In KwaZulu-Natal, for example, dormitories of from 4-16 bedspaces were the norm, but dormitories of 4-5 bed spaces are now becoming the norm. In Cape Town, two bed spaces per room was the norm, but wherever possible this has been decreased to one bed space per room. It should be noted, however, that whereas in KwaZulu-Natal, where hostels are fairly close to rural homes, there is generally only one occupant per bedspace, in Cape Town, which is much further away from hostel residents' rural homes, hostels are often occupied by families and there are typically three occupants per official bed space.

All hostels have shared cooking/eating facilities and ablution/laundry facilities. In a small block, the shared facilities might consist of a kitchen/dining area, toilet, shower, wash hand basin and a wash trough (for laundry) shared by two families (as in the Bokomo project). In a large hostel such as Jacobs in Durban, six 4-bed dormitories share the following facilities: a kitchen, 2 showers, 4 wash hand basins, 4 toilets, 2 urinals and a laundry with 4 wash troughs.

Hostel buildings are usually variations of a few standardised designs. The typical public sector hostel unit in Cape Town has 6 rooms (2 with 2 beds each and 4 with 3 beds each). There is a kitchen, a bathroom (with toilet, urinal and shower) and a storeroom. In Langa alone, there were 986 units of this type (in 425 single storey hostels and 34 double storey hostels), with a total of 15 776 bed spaces (Selvan, 1976). The grey sector hostels in Cape Town were also built to a similar design.



Figure 1: Typical hostel blocks in Langa, Cape Town

The outdoor space surrounding hostels varies considerably, from some hostels where there are many shacks between hostel blocks, to other hostels where there is extensive open space around the hostel blocks (although all

vacant land beyond the hostel walls may have shacks). The relationship of hostels to the surrounding residential areas varies considerably, but there is usually some degree of separation. Big hostels in KwaZulu-Natal, for example, often have access control systems and security guards. Even small hostels are often separated from surrounding residents by walls and gates.



Figure 2: There is a severe lack of space in hostels – people’s possessions have to be stored under, over and all around their beds

Living conditions in hostels are generally inadequate. Hostels are characterized by:

- Overcrowding and lack of privacy, e.g. in 1999 there was an average of 3 people per bed space in the grey sector hostels in Cape Town (DAG, 1999). Figure 2 gives some indication of the lack of space in hostels. Many hostel residents in the converted hostels reported that they used to live in single rooms shared by two families (in one case the two families totaled twelve people). Similarly, a survey of residents of an informal settlement in Kayamandi showed that many of the residents had previously lived in overcrowded rooms in the Kayamandi hostel, but had been unable to cope with the lack of privacy and overcrowding and had therefore moved out of the hostel into an informal settlement (DAG, 2002).
- Inadequate access to services: In the grey sector hostels in Cape Town, there was an average of 14 people per toilet, 16 people per sink, 17 people per shower, 22 people per washbasin, 23 people per kitchen (DAG, 1999). By comparison, the Cape Town City Council Building Regulations of 1972 stipulated that residential institutions must have one toilet and one bath or shower for every 12 men (Selvan, 1976).

- Poor state of repair. The survey of grey sector hostels in Cape Town found the following defects to be common (in order of prevalence): problems with walls (cracks, dampness); broken fence/wall around hostel; plumbing problems: broken toilets, blocked drains, geysers not working, leaking taps, showers not working; leaking roof, bad guttering; no refuse collection, unhygienic conditions, yard not maintained; broken doors, broken locks; electrical wiring faulty; ceiling is broken/collapsing; floors in bad condition. A survey of public sector hostels in Gauteng found similar problems, and also noted a lack of fire hydrants, no regular checking of fire extinguishers and hoses and hose reels in a state of bad repair (CASE, 2001). Figure 3 shows a poorly maintained communal cooking and eating area in a hostel.

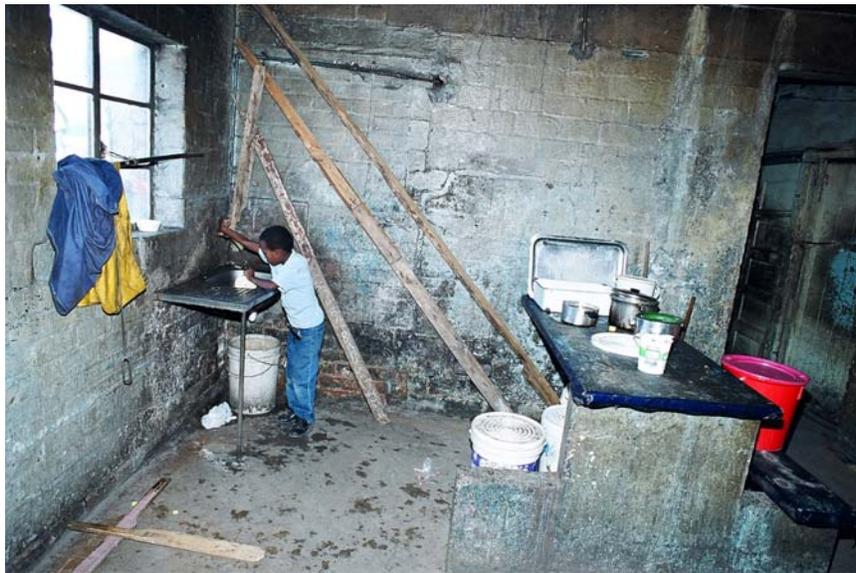


Figure 3: A badly maintained communal cooking and eating space in a hostel in Langa

- The nature of the external space around hostels: most hostel blocks are surrounded by badly littered and poorly drained open space and/or densely packed shacks.
- Lack of integration of hostels into surrounding areas: Hostels are often both physically and socially separated from surrounding formal residential areas. The relationship of hostels to surrounding shack dwellers can be even more complex. In some instances, shack dwellers use the services of hostels. In many cases, there are tensions between hostel dwellers and surrounding shack dwellers. For example, in Guguletu, the Martin and East hostel is surrounded by a wall, and hostel residents continually guard the gate. The hostel dwellers protect their open space inside the hostel walls, while outside the hostel walls every piece of vacant land is occupied by shacks.

What makes the hostel problem even worse in many areas is the sheer scale of it. In Cape Town, whole sections of townships were reserved for public or private hostels. Table 4 shows that at one stage three quarters of all the accommodation in the township of Langa and almost half of the accommodation in the township of Nyanga consisted of hostel accommodation for migrant workers. In the later township of Guguletu, developed in the 1960s, however, less than 10% of the accommodation was for migrant workers.

Table 4: Hostel accommodation as a proportion of total accommodation in Cape Town (1976)

Area	Single men in hostel accommodation (legal)	Total legal population	Single men in hostels as percentage of total legal African population
Langa	24 220	31 713	76%
Nyanga	8 378	18 721	45%
Guguletu	4 820	55 824	9%
Outside townships	12 510	12 510	100%
Total	49 928	118 768	42%

Source: Selvan, 1976

3. Redevelopment options

Even before the end of apartheid and transition to democracy, hostel dwellers began to propose ways in which their living conditions could be improved, and how the hostel areas could be turned into well-functioning residential areas. The Western Cape Hostel Dwellers Association's proposals of 1987 included the following (WCHDA, 1987):

- Convert public hostels into double storey row housing and private hostels into blocks of flats for single people
- Add a second storey to all single storey hostel blocks and add new wings in the 25-30m spaces between hostel blocks; build new row housing between existing hostels where space permits
- Demolish old communal ablution blocks, add bathrooms with full plumbing so that every family unit has its own bathroom
- Public squares defined by buildings with lower storeys used as shops; courtyards for meetings, children to play in, etc.

These proposals represent the ideal situation. Unfortunately there are financial constraints, which mean that it is impossible to redevelop all hostels in this way. Firstly, there is the constraint of the subsidy amount (R20 300 per family unit in 2002/2003). Secondly, low and irregular incomes can prohibit residents from being able to repay loans or afford the monthly operating costs.

Options for hostel redevelopment need to be considered within the context of these financial constraints. The overarching objective of hostels

redevelopment is to improve living conditions, and the potential ways in which this can be achieved include:

- Repairing building defects
- Improving access to services
- Increasing privacy
- Increasing the amount of space

Repairing building defects is the basic essential which should be carried out as part of any hostels redevelopment project, but sometimes lack of funds, lack of affordability of service charges or lack of space may mean that this is all that can be undertaken. Access to services can best be improved by providing each unit with its own kitchen and ablution facilities. Increasing privacy can best be achieved through combining small rooms into self-contained units. Increasing space while simultaneously avoiding the displacement of any residents requires the extension of the hostel and the adding on of new units.

In practice, the key redevelopment options are therefore:

- Upgrading (repairing building defects)
- Conversion to self-contained units through partition and adding private bathrooms (improving access to services, increasing privacy)
- Conversion into self-contained units and dedensifying by building extra units (increasing space and privacy, improving access to services)

Table 5 shows the advantages and disadvantages of each of these development options, and a case study of each option is discussed below. Increasing space and privacy through partitioning and extending the building, while keeping and upgrading communal washing-up and ablution facilities, is also theoretically a possibility. It has, however, been found that residents generally prioritise private bathrooms when it comes to the extension of the built area, as having private bathrooms is seen as a key element of increased privacy.

Experience with the Public Sector Hostel Redevelopment Programme in Gauteng suggests that the most popular types of upgrading are: building internal walls to create separate rooms, providing more toilets/ wash hand basins, providing more kitchens, and providing more baths or showers (CASE, 2001).

Table 5: Key advantages and disadvantages of different redevelopment options

Option	Advantages	Disadvantages
Upgrading	<ul style="list-style-type: none"> • Cheapest option. • Provides an affordable accommodation option which there is a demand for. • Only suitable for 	<ul style="list-style-type: none"> • Can only address problems of overcrowding, lack of privacy and inadequate access to services through displacement of some residents.

	hostels predominantly occupied by single people.	
Conversion to self-contained units through partition and adding extra facilities	<ul style="list-style-type: none"> Increases privacy and access to services. 	<ul style="list-style-type: none"> Higher monthly service charges for residents. Does not address overcrowding and lack of space.
Conversion into self-contained units and dedensifying by building extra units	<ul style="list-style-type: none"> Increases space, privacy and access to services. 	<ul style="list-style-type: none"> Most expensive option. Requires either sufficient vacant land for adding new units or else, for single-storey blocks, requires the construction of another storey.

It should be noted that tenure form is important. If the hostel is intended to remain as public rental there are no major design implications, but if it is going to be transferred to the ownership of the residents, there are major design implications:

- Conversion to communal ownership: There will need to be an office where the necessary administrative tasks are undertaken and an undercover meeting space is also required. Having some communal facilities is possible (e.g. washing lines, parking area, garden), but there will probably need to be individual water and electricity meters.
- Conversion to individual ownership: There will need to be fire walls between units up to the underside of the roof, no communal facilities are possible (all units must have sufficient outdoor space for washing line, parking, etc.) and all plots must have road access.

3.1 Case study of upgrading: Kranskloof Hostel, Durban

Kranskloof is an example of the upgrading of a large public sector hostel as part of the Public Sector Hostels Upgrading Programme. In 1999 the first phase of the upgrading of the Kranskloof Hostel was undertaken by the Inner West Operational Entity of the Durban Metropolitan Council.

The hostel had 10 463 bed spaces, although not all bed spaces were occupied. Problems with the hostel included a general bad state of repair, unsafe electrical wiring, hot water geysers not working, overcrowding, bad health conditions.

Phase One consisted of upgrading Block A and part of Block B, totaling 2235 bed spaces. The upgrading included the renovation of the dormitories, dedensifying from 6-bed to 5-bed dormitories, repairing the plumbing and electrical wiring and installing a new garbage disposal system. The upgrading had to comply with the minimum standards in the Policy for the Upgrading of Public Sector Hostels, which includes the following:

- Basic furniture: a bed, a mattress, one locker/wall unit
- Prepaid meter electricity supply, electric lights and plug point

- Hot water supply

The cost of the upgrading was undertaken within the hostels upgrading subsidy amount of R4600 per bed space (R4000 plus the extra 15% for difficult site conditions).

3.2 Case study of conversion to self-contained units through partition and adding extra facilities: Bokomo Hostel, Cape Town

This hostel was redeveloped in 2001. The project involved the conversion of six blocks accommodating 24 families, each occupying one or two rooms, with shared facilities, into 24 self-contained two room family units. This necessitated adding on 12 ablution blocks, enclosing the existing 12 ablution blocks and blocking up doorways to create two room self-contained units. Geysers and individual water meters were also added as part of the project. It was decided to choose individual ownership as a tenure option, so this required fire walls to be built up into the roof space between each unit and the land had to be subdivided into plots providing access to the road (half the plots fronted directly onto the street and the half were panhandle plots).

Each of the six blocks originally consisted of 6 rooms (of 9.8-10.9m² floor space each), two shared kitchens (10.9m² floor space each) and two bathrooms (8.4 m² floor space each). Generally four families occupied each block.

The redevelopment involved adding an extra two bathrooms to each block and partitioning each block into four units, each unit consisting of a bedroom, a lounge/kitchen and a bathroom.

The design population of each block, based on an average of 3 people per room was 18 people. The total built area of each block before the redevelopment was 120.9 m², with a habitable floor area of 82.8 m². The total built area added per block during the redevelopment was 22.5 m².

Table 6: Statistical indicators of the Bokomo redevelopment

Indicator	Before	After
Total built area per occupant (m ²)	6.7	8.0
Total habitable floor space per occupant (m ²)	4.6	4.6
Occupants per toilet	9	4.5
Occupants per shower	9	4.5
Occupants per wash hand basin	9	4.5

The redevelopment cost totaled R230 000, i.e. R9 600 per unit. The funds for the redevelopment were R150 000 from Bokomo, the former owners of the hostel, and R72 000 of foreign donor funding through the City of Cape Town.

3.3 Case study of conversion into self-contained units and dedensifying by building extra units: Martin & East, Cape Town

The proposed Martin and East project involved the conversion and extension of a hostels complex with 14 single rooms, 2 shared kitchens/dining areas and a shared ablution block into 16 self-contained family units. After extensive workshopping of residents, plans were drawn up and were approved by the City of Cape Town, but the project has not yet been implemented due to affordability constraints.

Although there were only 14 rooms, the hostel was occupied by 16 households. The households were very fluid in structure, but assuming an average of 3 people per household, the total number of residents was 48 people. Martin and East has an existing built area of 259.4 m² (230.8 m² for the rooms and kitchen/dining areas, and the ablution block is 28.6 m²). The habitable floor space is 179.0 m² (14 rooms x 9.4 m² plus the two kitchen/dining areas of 23.7 m² each). The ablution block was in a very bad condition, with broken toilets, leaking taps and blocked drains.

For the redevelopment it was proposed that the existing 14 rooms and two shared kitchen spaces be converted into eight self-contained units, and that a further eight self-contained units be built. The ablution block was to be demolished, as it was no longer necessary and the space would be required for parking. The total built area of the hostel after redevelopment would have been 433.6 m², with a habitable floor space of 315.2 m².

Previously consisted of 14 single rooms of 9m² floor space each plus shared cooking facilities and ablution facilities – being converted and extended to 16 self-contained units. Each unit would have been 25m² in size (with 19.7 m² of habitable space) consisting of a lounge/kitchen, bedroom and bathroom with a toilet, shower and wash hand basin.

Table 7: Statistical indicators of the proposed Martin and East redevelopment

Indicator	Before	After
Total built area per occupant	5.4	9.0
Total habitable floor space per occupant	3.7	6.6
Occupants per toilet	12	3
Occupants per shower	12	3
Occupants per wash hand basin	12	3

The total cost of the redevelopment was estimated as at least R442 000, i.e. about R27 600 per unit. The project was to be funded by institutional subsidies (at the time the subsidy amount was R18 400), a grant of R5 000 per unit from the City of Cape Town and individual loans of about R5 000 per beneficiary.

Table 8: Estimated cost of proposed Martin and East redevelopment

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Item	Cost (R)
Land	4 300
Site works	15 000
Individual water meters	24 000
Upgrading/conversion of existing building into 8 units	140 000
Building of 8 new units	231 120
Professional fees	28 000
Total	R 442 420

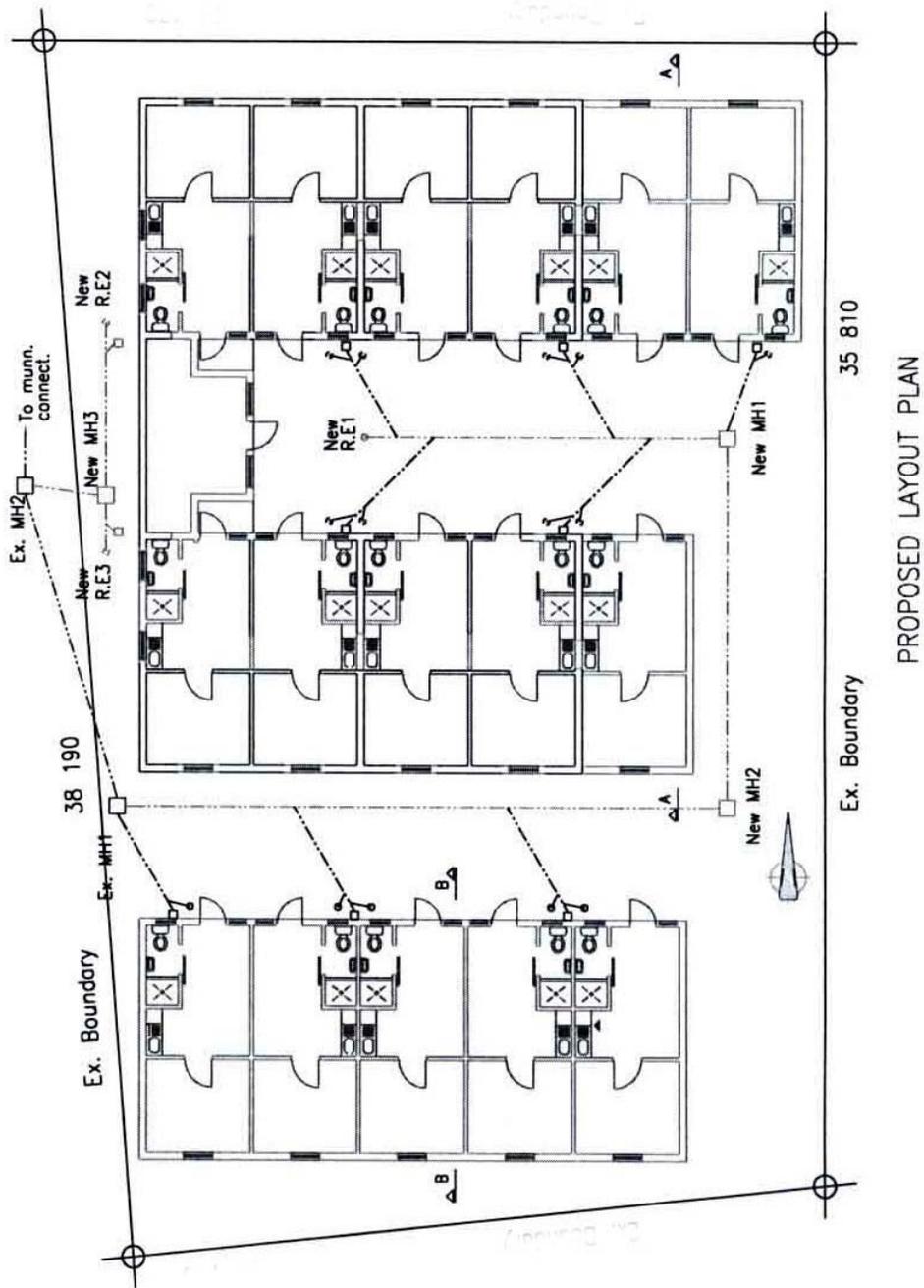


Figure 4: Proposed redevelopment of the Martin and East hostel
Source: DAG

4. Design principles

Design principles for hostels redevelopment need to be seen within the context of the objectives of broader housing policy. The National Housing Vision, as set out in the Housing Act of 1997, is:

“the establishment and maintenance of habitable, stable and sustainable public and private residential environments to ensure viable households and communities in areas allowing convenient access to economic opportunities, and to health, educational and social amenities in which all citizens and permanent residents of the Republic will, on a progressive basis, have access to:

- permanent residential structures with secure tenure, ensuring internal and external privacy and providing adequate protection against the elements;
- and potable water, adequate sanitary facilities and domestic energy supply.”

Housing conditions are an essential aspect of striving to create a better life for all. There is a strong link between housing quality and general mental health and social well-being: "since housing provides the scenario for family life, recreation, rest, sleep and social interaction, it follows that many aspects of poor housing, such as overcrowding, noise, air pollution, bad odours or dampness, give rise to considerable dissatisfaction and annoyance and perhaps contribute to poor health" (Ranson, 1991). Various studies have also shown that early exposure to adverse living conditions are likely to increase vulnerability to illness and disease in later life (Hunt, 1993).

The key design principles that should guide hostels redevelopment are:

- Adequate living space and privacy
- Good quality communal space
- Optimal use of space
- Flexibility and adaptability
- Energy efficiency
- Greening
- Supporting sustainable livelihoods
- Integration into the surrounding urban area
- Contextual suitability

Adequate living space and privacy

Adequate housing has to provide adequate space for the occupants. Research has shown that there is a linkage between overcrowding and respiratory infections such as bronchitis and tonsillitis in children as a result of the increased risk of pathogen transmission which overcrowding brings (Ranson, 1991). There is also a strong link between overcrowding and psychological distress (Gabe and Williams, 1993). The key elements of ensuring privacy are:

- Single person units for single people and family units for families
- Private bathrooms
- Individual access to units

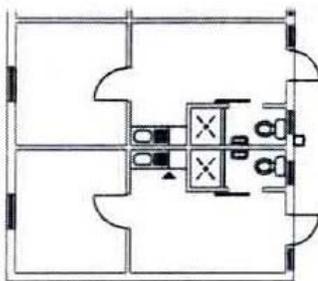
Private bathrooms and individual access to units (as opposed to communal stairs and corridors) may not always be possible for single person accommodation, however.



Figure 5: Private bathroom in converted hostel, Langa

Practical experience with hostels redevelopment in Cape Town suggests that a minimum acceptable self-contained unit should consist of:

- A bedroom with at least 9m² of floor space.
- A lounge/kitchen with at least 11m² of floor space, including a kitchen sink (the Uniform Building Code of the Internal Association of Building Officials and the MANTAG guidelines both recommend that at least one room in every dwelling have an area of at least 11 m²).
- A bathroom of at least 2.5 m² of floor space, including a toilet, shower and wash hand basin.



The unit should therefore have a total of at least 22.5 m² of floor space. The overall minimum size of the unit, from outside of wall to outside of wall, or to the midpoint of walls shared with other units, will typically be at least 25 m². Each room should have at least one light fitting and one window. The unit requires only one external door. A sliding door should be used for the bathroom – although more expensive than side hung doors, they can save valuable space.

Figure 6: 25 m² self-contained units

Source: DAG

The suggested minimum size is less than the minimum size of 30m² specified for subsidized housing in the Minimum Norms and Standards for Permanent

Residential Structures, but households in hostels are generally smaller and have a more fluid structure than most other households. In some cases it may be possible to achieve larger sizes, but space and financial constraints may sometimes mean that even this basic minimum standard will be unattainable, and that some sharing of facilities may be necessary.



Figure 7: A living room in a converted hostel unit in Langa

For single people, one room, with access to shared ablution, laundry and cooking facilities can be adequate. The minimum sized room for a single person should be 12m^2 , with access to a shared bathroom and kitchen (ideally, a maximum of four single people should share a bathroom or kitchen). Where it is possible to have private bathrooms, the minimum size unit including a bathroom should be at least 15m^2 . It should be noted that, in practice, single rooms can often become occupied by families; this should be avoided through needs analyses prior to the design process to determine whether there is a demand for single room accommodation, ongoing monitoring of occupancy rates and flexible allocation procedures to respond to genuine changes in household size.

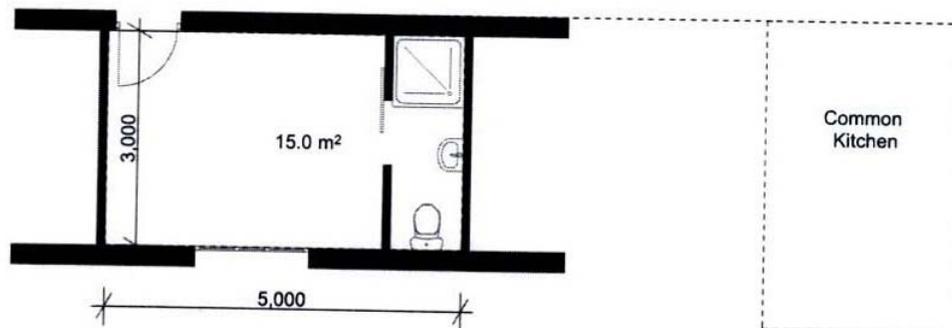


Figure 8: 15m^2 with private bathroom

Source: Architects Associated

Table 9 shows typical costs for these ideal minimum sized units. The higher figures are the actual average 2002 costs per square metre for conversion of hostels and construction of new units in the public sector hostel redevelopment programme in Cape Town. This is conventional contractor delivery, however, and with a fairly high level of finishes. Experience suggests that with lower finishes and greater involvement of residents/small builders in the construction, the costs of conversion can be halved and the costs of new construction can be reduced by up to 20% - the lower figures reflect this. It should be noted, however, that in some cases each unit may consist of elements of both conversion and new construction and that the cost of converting units can vary greatly, depending upon the existing design and its state of disrepair.

Table 9: Typical costs of minimum sized units

Description of minimum unit	Area	Cost of conversion, including shared facilities (up to R900/m ²)	Cost of new unit, including shared facilities (up to R1400/m ²)
Single person room with shared bathroom and kitchen (4 units sharing a bathroom and kitchen)	12 m ²	6 750 - 13 500	16 800 - 21 000
Single person room with private bathroom and shared kitchen (4 units sharing a kitchen)	15 m ²	7 875 - 15 750	19 600 - 24 500
Family unit for small family with two habitable rooms sharing a bathroom (2 units sharing a bathroom)	20 m ²	9 675 - 19 350	24 080 - 30 100
Family unit for small family with two habitable rooms and private bathroom	25 m ²	11 250 - 22 500	28 000 - 35 000

Good quality communal space

Even after redevelopment, hostels are likely to have a fairly high occupational density, so it is important to ensure that there is also good quality communal space that can be used for activities that are unable to be accommodated within the units. Both internal and external communal space is important.

External space can consist of:

- Play space for children
- Space for hanging washing to dry
- Space to put out refuse bins for collection
- Green space: trees, flowers, grass, communal vegetable garden
- Space for outdoor work and social interaction (for example, an outdoor braai area)

Internal space can consist of:

- Office space/meeting space (especially if a communal ownership body is going to be set up)
- For where there are rooms without facilities, there will need to be shared kitchens, bathrooms and laundry facilities
- Communal stairs and corridors (these can be important social spaces and should be spacious and well lit).
- For large complexes, there could be additional communal spaces such as a recreation room or a communal laundry

The quality of external space is particularly important, as often this is neglected. In the past, hostel areas were noted for the sandy wastelands between buildings, with shacks, abandoned cars and litter. Experience shows that outdoor space is only used if it "defensible", for example, where the outdoor space is overlooked by windows and where there is a sense of enclosure created by the location of buildings, fences and trees. Given the absence of private yards, it is important that there be "defensible space" for the use of the residents. Landscaping or paving of public spaces is also important, to enhance the attractiveness and usability of the space.

Figure 9 shows the public spaces created between redeveloped hostel blocks in the New Flats area in Langa – note the trees and stone chip surfacing. All the units front on this space – windows, balconies, staircases. These are safe spaces for children to play in, and also provide parking space for the small number of residents who have cars.



Figure 9: Courtyards between redeveloped hostels in Langa

Optimal use of space

In order to minimize or eliminate the need for displacements, it is important to make optimum use of space when redeveloping a hostel. Where possible, additional buildings can be built (for example, as with the Lukhanyo hostel) or single storey buildings can have another storey added to them.

It is essential that residential densities are increased where possible in order to make optimal use of scarce vacant land. Higher densities can also contribute to a better functioning urban area. Density is measured in dwelling units per hectare (DU/Ha). Gross residential density includes non-residential land usage within residential neighbourhoods, such as roads, public open space and community facilities. Ideally, 60% of land in housing developments should be for residential usage, with 20% for roads and other circulation space and 20% for public space (Turner, 1980). The CSIR Guidelines for the Planning and Design of Human Settlements (the Red Book) recommend a minimum gross residential density of 50 DU/Ha as being suitable for “developing areas” in South Africa, in order to viably support commercial enterprises and public transport.

Studies in Latin America have shown that densities of 300 - 600 people per hectare (about 60 - 120 DU/Ha) have been found to have the cheapest per capita infrastructure costs and can produce an acceptable and desirable residential environment. Infrastructure costs per capita at a density of 75 people per Ha (about 15 DU/Ha) are more than three times higher than densities at 300 people per hectare (Aciolo, 1996).

Social housing projects like Shayamoya in Durban show that a good living environment can be provided with gross residential densities as high as 120 dwelling units per hectare (including space for shops, playgrounds, etc).

Flexibility and adaptability

Units must ideally be designed so as to be flexible enough to meet the needs of a wide range of different types of households. Multi-purpose rooms are important, for example, the living room of a family unit should also be able to be used as an eating or sleeping area. Being able to convert single person accommodation to family units (or vice versa) can also be important, for example, through the design of a unit that can be used either as a self-contained family unit or as accommodation for single people sharing a bathroom and kitchen space. This is part of the concept of lifetime homes, i.e. “homes designed to meet changing needs occurring throughout one family’s lifetime or to meet the varying needs of numerous changes of occupier in the same home” (Cummins, 1999). This means that dwellings should be able to meet the varying needs of occupants over their lifetimes, including needs associated with moderate mobility difficulties and the normal frailty associated with old age (Ibid).

It should be noted that although the sizes proposed in the section on adequate living space can be acceptable in the short to medium term, in the long term there should be provision for being able to extend the units to more acceptable sizes (e.g. through being able to extend buildings horizontally or

vertically or through being able to convert units as add space for extensions. The ideal minimum size to aim for, as recommended by the United Nations, International Union of Family Organizations and International Federation for Housing and Town Planning range from a 38m² three room unit for a family of two, to a five room 62m² unit for a family of six (Ranson, 1991) These sizes provide adequate space for health and privacy and also cater for factors such as providing separate bedrooms for children of the opposite sex. Similarly, the Johannesburg Housing Company's guidelines for flat sizes range from 30m² for one person to 85m² for a household of six people (JHC, 1998). For single person accommodation, in which cooking and ablution facilities are shared, the minimum size room can be adequate in the long term.

Greening

Trees and vegetation are an essential component of a desirable living environment. One of the most noticeable differences between affluent suburbs and low-income areas is the lack of trees and other vegetation in low-income areas. In the Netherlands, the Building Code of Practice makes it a legislative condition that wherever possible landscaping with trees and vegetation be part of all building developments (Holdsworth and Sealey, 1992).

Vegetation can have many beneficial effects:

- Enhance the appearance of an area and help create a sense of enclosure, e.g. trees and bushes along roads and around public spaces.
- Provide shelter from noise, sun, wind and rain.
- Help in filtering pollution: trees with a bushy canopy and broad leaves are able to trap dust and other pollutants and act as air purifiers (Holdsworth and Sealey, 1992).
- Reduce runoff: vegetation acts as a sponge to absorb water, which improves on-site drainage
- Reducing erosion and sand storms: vegetation can reduce erosion by up to 50% (Cotton and Franceys, 1991)
- Provide fruit and vegetables: a 50 m² food garden can provide for all the vegetable needs of four people (about 300 kg per year) (Eberhard, 1987)

Energy efficiency

In order to make the redevelopment more sustainable it is essential that principles of energy efficiency and sustainability are integrated into the design. Proper design can reduce energy costs, which typically forms 20-40% of low-income households' monthly expenditure (Eberhard and Van Horen, 1996).

The installation of ceilings and plastering of walls are important in reducing heat loss and minimizing the need for space heating. In the Kutlwano project in Kimberley, energy efficient designs resulted in a 70% saving in space heating costs.

Solar orientation is also important. In the southern hemisphere houses should face north, i.e. most of the window surface should be on the north side. There should ideally be no more than a 15 degree variation from north-south, east-west (Guidelines for Environmentally Sound Low-Cost Housing, 1998). Windows on west facing walls should be avoided due to problems of overheating during the afternoon. As an example of the effect of orientation, a study found that north facing houses were comfortable 28% of the time in winter, while west facing houses were comfortable only 11% of the time (NBIR, 1987).

Ventilation and lighting

A noticeable trend with existing hostels is a severe lack of ventilation and day lighting. Adequate housing needs to be suitably ventilated and have sufficient natural illumination during the day. Ventilation is necessary to provide fresh air and to remove indoor air pollutants, via openable windows and air-bricks. Windows are also essential for providing light during the day. "The penetration of direct sunlight into living accommodation has favourable psycho-physiological effects on both thermal comfort and biological activity of the body, and also has a bactericidal effect. Daylight gives occupants a feeling of direct contact with the outside world, an important factor for mental and social well-being" (Ranson, 1991). The lack of adequate daylight in a dwelling can also prevent activities such as reading and sewing from being undertaken indoors. In the new housing projects studied in the background research for this report, it was noticeable that, due to curtains being continually closed or windows being permanently boarded up for reasons of privacy and security, daylight illumination was often inadequate even for tasks such as cooking. Openable window space of 5% (1:20) is an international standard for minimum ventilation requirements for habitable rooms, and can also provide adequate lighting if the windows are suitably positioned (see section 5.3.3). Windows that are too large, however, can result in unacceptable heat gain or heat loss and can also be a security risk.

Supporting sustainable livelihoods

Given high levels of unemployment and poverty amongst residents of most hostels, it is essential that economic development and opportunities for sustainable livelihoods are promoted.

Suitable space needs to be provided for small business activities, either through the flexible design of units or by the provision of purpose built units which can be rented as shops or workshops. It is important that the hostel is integrated into the surrounding area, so that clientele from the surrounding area and not just other hostel residents can be attracted.

Figure 10 shows the integration of small shops into the ground floor of a redeveloped hostels block. Small businesses which previously were located in small informal structures, are now in healthier, cleaner units that can be securely locked up.

Allowing use of units for certain small business activities (as long as it is not a health hazard or cause a disturbance to other residents) is important and so is allowing people to let out rooms in their unit (as long as there is no overcrowding).



Integration into the surrounding urban area

Integrating hostel areas into surrounding urban areas is a key design principle - it is important to look at the space between hostel buildings and the relationship of the hostels to the surrounding urban fabric

The use of hostel facilities by surrounding residents can be a way of facilitating greater integration, e.g. shops, taverns, halls. Table 10 shows the guidelines for the provision of community facilities. As can be seen from the thresholds necessary for most facilities, any facility located in a hostel area would usually have to serve the surrounding area as well, and not just the hostel residents.

Figure 10: Shop units on the ground floor of a redeveloped hostel block in Langa, Cape Town

Table 10: Recommended maximum distances, minimum population thresholds and minimum space requirements for community facilities

Facility	Recommended maximum distance to facility	Estimated minimum population threshold per facility (number of people)	Estimated minimum space required per facility
<i>Education facilities</i>			
Crèche	Maximum walking distance of 750 m	5 000	130 m ²
Primary school	Maximum walking distance of 1 km	3 000	2.4 Ha (24 000 m ²) – 1.4 Ha for buildings and 1 Ha for sportsfields
High school	Maximum walking distance of 2.25 km	6 000	4.6 Ha (46 000 m ²) – 2.6 Ha for buildings and 2 Ha for sportsfields

<i>Health facilities</i>			
Mobile clinic	Maximum walking distance of 1 km	5 000	N/A
Clinic	Maximum walking distance of 2 km or within 30 minutes travel time by public transport	5 000	1 000 m ²
<i>Recreation facilities</i>			
Local park	Maximum walking distance of 750 m	-	450-1 000 m ²
Sportsfields	Maximum walking distance of 1.5 km (school sportsfields should be within 300 m of school buildings)	-	Variable – a regulation size soccer field is 6 825 m ²
Playgrounds	Within 300 m of primary school buildings and crèches	-	450-1 000 m ²
<i>Other facilities</i>			
Religious centres (e.g. church)	Maximum walking distance of 1.5 km	2 000	150 m ²
Library	Maximum walking distance of 2.25 km	5 000	130 m ²
Community centre	Maximum walking distance of 2 km or within 30 minutes travel time by public transport	10 000	5 000 m ²
Post office	Maximum walking distance of 2 km or within 40 minutes travel time by public transport	11 000	500 m ²
Police station	Maximum walking distance of 1.5 km or within 20 minutes travel time by public transport	25 000	1 000 m ²
Community information centres	Maximum walking distance of 1 km or within 15 minutes travel time by public transport	22 000	Variable
Municipal offices/pay points	Within 30 minutes travel time by public transport	50 000	3 000 m ²

Source: based on information contained in the Department of Housing/CSIR Guidelines for Human Settlement Planning and Design (2000)

Contextual suitability

Hostels redevelopment should always take the social and biophysical context into account. Climate conditions vary considerably from region to region and need to be taken into account, as do the site conditions of the site the hostel is located on. The social use of space may also be very different in different

contexts, and the participation of residents in the design process is therefore essential.

There may, however, sometimes have to be a trade off between social needs and other issues, such as affordability and overall quality of the living environment.

5. Funding options for the capital cost of hostels redevelopment

The options for funding hostels redevelopment are:

- Housing subsidies
- Non-government grant funding
- Loans
- Savings
- Sweat equity

Housing subsidies

For upgrading of public sector hostels, there is the hostels upgrading grant, which is currently (2002/2003) set at R 5 075 per bed space (which can be increased by 15% for difficult site conditions). For conversion to family units there is a subsidy of R20 300 per unit (which can be increased by 15% for difficult site conditions). For public sector hostels, this subsidy is part of the Public Sector Hostels Redevelopment Programme subsidy stream, while for private and grey sector hostels, the Institutional Subsidy is used.

Note that for the conversion of private sector and grey sector hostels to individual ownership, the subsidy amounts will be less for households with joint incomes of above R1 500 per month.

Table 11: Subsidy amounts

Monthly joint income (Rands)	Project-linked subsidy(Rands)	Institutional subsidy; hostels upgrading grant for family units (Rands)	hostels upgrading grant for individuals
Old aged, disabled, indigent	22800	-	-
0-1500	20 300	20 300	5 075
1501-2500	12 700	20 300	5 075
2501-3500	7000	20 300	5 075
3501+	-	-	-

Note that these are the basic subsidy amounts. These amounts can be increased by up to 15% for difficult site conditions(e.g. steep slopes, hard rocky ground or sandy soils with high water tables).

Non-government grant funding

For private and grey sector hostels the former owners of the hostel may contribute some funding. This amount can vary substantially, from R20 000 in

the case of Martin and East to R150 000 in the case of Bokomo. It is also possible to get foreign donor funding for the redevelopment of private sector and grey sector hostels. For setting up housing institutions, it is possible to get start-up grants of up to R100 000 from the Social Housing Foundation.

Loans

Loans: Loans at below-market rates for housing institutions can be obtained from the Social Housing Foundations' Housing Institution Development Fund. For co-operatives, it is also possible for households to get individual loans of up to R10 000 each. This will often only be possible for formally employed people whose employers have stop order facilities, however.

In the Bokomo project, some residents received loans from the Kuyasa Fund. In 1999 DAG set up a non-profit housing credit organization called the Kuyasa Fund, Due to the majority of beneficiaries in DAG projects being unable to qualify for micro-loans from the formal micro-lending industry (because they were not formally employed or because their employers did not have payroll deduction facilities). The Kuyasa Fund lends housing micro-loans of up to R10 000. Borrowers have to save for six months before becoming eligible for a loan. In the 2001/2002 financial year, the Kuyasa Fund loaned R1.9 million to 527 borrowers (an average of R3 600 per loan). Most loans are in the R1 000 to R5 000 range, with typical loan repayments of R100 to R300 typically with repayments of R100 - R300 per month over 12 or 18 months (the interest rate is higher than for mortgage loans from banks because of the far greater amount of admin work and field work required per loan, and because of the small loan amounts). The Kuyasa Fund has had an excellent repayment rate and has proved that low-income people, including informally employed people and pensioners can be credit worthy (53% of Kuyasa borrowers are informally employed, 14% are pensioners and 72% are women heads of households).

Savings

Beneficiary contribution in the form of savings is extremely important. Saving as little as R50 per month during the period of the conceptualisation, planning and implementation of a housing project can result in a fairly substantial addition to the subsidy amount. The communal nature of hostels often means that it is relatively easy for savings groups to function well. It is also important to develop a culture of regular monthly savings, especially where some form of housing institution is proposed, to prepare households for the regular payment of monthly operating costs.

Sweat equity

The involvement of hostel residents in the implementation of the project, although not a funding source, can potentially reduce the capital cost of the redevelopment. It is important to note that it is not only involvement in the actual construction work – administrative tasks such as filling in subsidy application forms, materials management and security are all tasks that hostel residents can be involved in.

6. Delivery options

The two components of the delivery process are:

- Planning and design
- Implementation

Planning and design

Participation of hostel residents in the planning and design of the proposed hostels redevelopment is essential. Section 10.3 of the National Housing Code says that:

“The planning and design of the hostel redevelopment scheme upgrade must be done in an inclusive manner. This requires the formation of a representative Local Negotiating Group (LNG) comprising stakeholders such as the municipality (or PHDB), hostel residents, representatives of the neighbouring community, and local business people. The underlying principle is that all stakeholders affected by the hostel redevelopment scheme must participate in the LNG and related decision-making.”

For small grey sector and private sector hostels it is not necessary to include stakeholders in such a formal structure, but other stakeholders do need to be consulted.

The hostel residents themselves need to be involved in at least the following major decisions:

- Selection of a representative structure
- Choice of design
- Choice of tenure option
- Choice of construction model, e.g. choice of contractor,
- Choice of management model

It should be noted that uninformed participation is not real participation – there needs to be capacity building on all of the above issues to ensure that the residents or their representatives are able to meaningfully participate in the decision making.

Implementation

The conventional option is to go out to tender and select the most suitable tender proposal. There would usually be a stipulation regarding the use of local labour. For example, in the Cape Town hostels redevelopment programme, the local labour requirement was 80%. Figure 11 shows builders, mainly local people, working on the public sector hostels upgrading programme in Langa.

For big projects, a hostel resident is appointed as a Community Liaison Officer, and is responsible for co-ordinating the required labour.

Although this does result in the creation of temporary jobs for the duration of the project, the process is not without problems, for example (Watson et al, 1994):

- The selection of workers and determination of rates of pay can cause conflict
- Local workers sometimes lack construction skills and experience, which can result in a slow rate of construction and having to redo things that are of poor quality
- Time pressures mean that the only training is usually *ad hoc* on-the-job training, which is often not sufficient.



Figure 11: Construction of an infill block in the hostels redevelopment programme in Langa

The nature of hostels redevelopment work is such that it involves a lot of skilled demolition and construction work, including a lot of plumbing work, that is not always conducive to the involvement of residents. There is, however, still some scope for the involvement of residents in construction work, however, e.g. digging of trenches and building of new units.

There are often hostel residents with construction skills. For example, a survey of 1 444 Mangaung hostel dwellers (Bloemfontein), it was found that 23% of the hostel residents were skilled construction workers: 95 (7%) were painters, 94 (7%) were bricklayers, 55 (4%) were electrical assistants, 53 (4%) were carpenters and 36 (2%) were plumbers (LMV, 2000).

Where new units need to be built, a People's Housing Process approach can potentially be used. The key features of a People's Housing Process approach include the following:

- There is real community control. The community needs to be the developer and manage the project, and this requires extensive capacity building.
- Support is provided by appropriate organisations. This support needs to include: capacity building, training, assistance in setting up Housing Support Centres, assistance in accessing subsidies, assistance with project management and monitoring.
- Residents can be involved in the project in a variety of ways, e.g. as a storekeeper, assisting hired builders, as part of a mutual help building team or by doing finishes to their unit on a self-help basis. On-site construction training and advice will be required.

As it may not be affordable to provide an ideal sized unit with the ideal level of finishes right away, it is important to adopt an incremental approach. For example, the plastering and painting of internal walls can be done at a later date, once the residents can afford this. Future extensions can also be allowed for:

- Positioning of the units to allow space for extensions
- Serrated edges of walls to facilitate extension of walls
- Extended concrete slab, so that only the superstructure needs to be extended
- Extended roof covering which can be used as a veranda and later be filled in
- Positioning windows so they can be easily converted to internal doors
- Having a flat roof slab that a story can be added to

7. Conclusions

The table below illustrates the examples of the three broad hostels redevelopment strategies discussed in Section 3. The example of Kranskloof shows that just repairing a hostel to make the living conditions more acceptable, without fundamentally changing it, can cost about R5 000 per unit. The example of Bokomo is where privacy and access to services were improved through the provision of private bathrooms per household, but overcrowding was not alleviated. The cost of this was approximately R10 000 per unit, double that of upgrading. Martin and East represents the ideal option, of almost doubling the size of the hostel and providing every household with increased space and privacy, but at a cost of over R25 000 per unit.

Table 12: Comparison of redevelopment options

Option	Upgrading (e.g. Kranskloof: rooms shared by five people each)	Conversion to self-contained units through partition and adding extra facilities (e.g. Bokomo)	Conversion into self-contained units and dedensifying by building extra units (e.g. Martin and East)
Extension of total built area	0%	20%	90%
Extension of	0%	0%	75%

habitable floor space			
Cost per unit	R 4 600	R 9 600	R 27 600

All three strategies are important and may be the best option in a particular situation. Upgrading of hostels is important as it provides an affordable and appropriate tenure option for some people, e.g. men who intend returning to their rural home but are staying in the urban area for work purposes. Adding private bathrooms involves extending the built area by a fairly substantial amount, e.g. almost 20% in the case of Bokomo, but this amount of space is generally available around hostels. Converting to self-contained units and adding additional units for all residents can require very extensive additional space, i.e. extending the size of the hostel by almost 90% in the case of Martin and East. If this amount of vacant space is not available, this means building upwards, which will have additional cost implications (e.g. cost of dismantling roof, cost of stairs).

Where there is sufficient funding and space available, it will be possible to ensure that all residents have sufficient space and privacy and live in self-contained units with private bathrooms. In most cases, however, the preferred option will probably lie somewhere between the Bokomo and Martin and East examples, with conversion to self-contained units and addition of extra services, and some additional space, but not enough to ensure sufficient space and privacy for everyone. The only option, apart from continued overcrowding, is for the displacement of some residents to new housing projects (or to vacated spaces in upgraded hostels).

There are few examples of good practice with regard to redeveloping hostels and setting up affordable and sustainable housing institutions, but these lessons need to be built upon and tested in practice, so that adequate and affordable accommodation can be provided for all hostel residents in South Africa.

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