

# The National Housing Code

Technical and General Guidelines



**human settlements**

Department:  
Human Settlements  
REPUBLIC OF SOUTH AFRICA

Volume 2

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**ACRONYMS**

Expanded Public Works Programme	EPWP
Department of Water and Environmental Affairs	DWEA
Housing Subsidy System	HSS
Human Settlement Redevelopment Programme Fund	HSRDP
Integrated Development Plan	IDP
Integrated Residential Development Programme	IRDP
Member of Executive Council	MEC
Medium Term Expenditure Framework	MTEF
National Department of Human Settlements	ND
National Home Builders Registration Council	NHBRC
Provincial Department responsible for human settlement	PD
Value Added Tax	VAT
National Building Regulations	NBR







## Technical Guidelines

- 1 Part A: Introduction to the National Housing Programmes**
- 2 Part B: Technical Provisions
- 3 Variation Manual
- 4 Extended Public Works Programme (EPWP) Guidelines
- 5 Housing Subsidy Systems
- 6 Multi Year Planning
- 7 Monitoring and Evaluation



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## 1 PART A: INTRODUCTION TO THE NATIONAL HOUSING PROGRAMMES

### 1.1 OVERVIEW

#### 1.1.1 APPLICABILITY OF GENERAL FRAMEWORK TO HOUSING SUBSIDY SCHEME

The following General Framework is prescriptive in nature, and applies to the following National Housing Programmes:

- a) Individual Subsidies;
- b) Integrated Residential Development Programme;
- c) Consolidation Subsidies;
- d) Institutional Subsidies; and
- e) Rural Subsidies: Communal Land Rights

#### 1.1.2 GENERIC PROVISIONS

- These Generic Provisions deal with issues pertaining to housing subsidies. These need to be noted in addition to the Technical Guidelines section, which contains the revised Technical Norms and Standards for the Construction of Stand Alone Residential Dwellings Financed through National Housing Programmes, details of variations to the subsidy amount, Environmental Guidelines, a synopsis of the Extended Public Works Programme, the Housing Subsidy System and details as regards monitoring and evaluation.
- It is important to note that there are also specific rules that apply to each subsidy programmes. For instance, some programmes have specific eligibility criteria that apply over and above the criteria specified in these Generic Provisions. These are not explained in this chapter, but are dealt with in the chapter dealing with the subsidy to which they apply.
- This document deals specifically with programmes approved with effect from 1 April 2007. Reference should also be made when necessary to the National Housing Code: March 2000. In particular, the Blocked Projects programme still forms part of the March 2000 National Housing Code, as well as Guidelines for the Deregistration of Missing Beneficiaries and the Rectification of Houses Delivered between 14 March 1994 and 31 March 2002.

## 1.2 SUMMARY OF MAIN CRITERIA FOR ELIGIBILITY

The following main criteria need to be fulfilled in order for a person to be eligible to apply for a housing subsidy. A person only qualifies for a housing subsidy if he or she is:

- a. Resident:** he or she is lawfully resident in South Africa (i.e. citizen of the Republic of South Africa or in possession of a permanent residence permit. Certified copies of the relevant documents must be submitted with the application).
- b. Competent to contract:** he or she is legally competent to contract (i.e. 18 years of age or older, legally married or legally divorced and of sound mind).
- c. Not yet benefited from government assistance:** 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. Such previous beneficiaries may, however, qualify for the purchase of a vacant serviced site.

In the case of a divorced applicant who 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, the terms of the divorce order will determine such an applicant's eligibility for any further benefits under this Programme. Divorced applicants who acquired ownership of a residential property or who derived a financial benefit from the sale of a residential property as part of the dissolution of the joint estate, will be disqualified from accessing any further housing subsidy, except that such an applicant may purchase a serviced stand developed as part of a project financed from any of the National Housing Programmes.

- d. Previously owned a fixed residential property:** such a person may only qualify for the purchase of a vacant serviced site. However, if a person has obtained a residential property without government assistance and the property does not comply with the National Norms and Standards for the construction of stand-alone dwellings, such a person still qualifies for a housing subsidy. The property so acquired must be in possession and registered in the name of the potential beneficiary, with the Registrar of Deeds.

In addition to the above requirements, any applicant must also satisfy the following criteria, as linked to the benefits of the Programme:

**e. Married or cohabiting:** he or she is married (in terms of the Civil Law or in terms of a Customary Marriage) or habitually cohabits with any other person. The word “spouse” includes any partner with whom a prospective beneficiary habitually cohabits.

Where an application is made for a subsidy on the basis of a legal marriage or cohabitation arrangement, it is required that the property must be registered in the names of both spouses in the Deeds Office. Documentary proof of the marriage and affidavits from both spouses in respect of cohabiting arrangements and customary marriages must be provided.

Applicants who satisfy the above criteria may qualify for the purchase of a serviced site and/or a housing subsidy for the construction of a top structure.

**f. Single with Financial Dependents:** he or she has proven financial dependents. A financial dependent refers to any person who is financially dependent on the subsidy applicant and who resides permanently with the housing subsidy applicant. Financial dependents include any or a combination of the following proven financially dependent persons of, and residing permanently with, the subsidy applicant:

- i) Biological parents or parents-in-law;
- ii) Biological grandparents or grandparents-in-law;
- iii) Brothers/sisters under the age of eighteen (18) years or, if older, who are proven financially dependent on the applicant;
- iv) Children under the age of eighteen (18) years, i.e.:
  - a) Grand children;
  - b) Adopted children;
  - c) Foster children;
  - d) Biological children;
  - e) Any of the above persons over the age of eighteen (18) years who are still studying and who are financially dependent on the applicant; and
- v) extended family members who are permanently residing with the applicant due, for example, to health problems and who are therefore proven financially dependent on the housing subsidy applicant;

**Special Provision:** it is a requirement that in cases where housing subsidy applications are submitted by single persons with financial dependents, that the particulars from the identification document of such dependents must be recorded on the application form, and the information must be captured in the Housing Subsidy System. The following documents amongst others, must accompany an application for a housing subsidy:

Certified copies of:

- i) Birth certificates, bearing the thirteen digit identity number for children who do not have bar coded identity documents;
- ii) Bar coded identity documents of all persons who are claimed as part of the household;
- iii) Divorce settlement documentation (to prove custody of children) where relevant;
- iv) Affidavits and/or sworn statements for unions solemnised in terms of SA Civil Law to prove the authenticity of the relationship to the applicants, where applicable; and
- v) Court orders or, orders issued by the Commissioner of Child Welfare to prove guardianship for foster children, where relevant.

Applicants who satisfy the above criteria may qualify for the purchase of a service site and/or a housing subsidy for the construction of a top structure.

**g. Single persons without financial dependents:** Applicants falling within this category may apply for the purchase of a serviced site in project linked approved projects. Once this person satisfies the other qualification criteria of that Programme, he or she may apply for a housing subsidy for the construction of a top structure. Single persons may also apply for rental accommodation.

**h. Monthly household income:** in cases where the gross monthly household income of his or her household:

- i) Does not exceed the maximum income limit as approved by the Minister from time to time, he or she may qualify for a housing subsidy for the construction of a top structure.
- ii) Exceeds the amount of R3 500,00 but is not more than R7 000,00, he or she may qualify to apply for a Finance Linked Individual Subsidy for the construction of a house.

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.

For the purposes of assessing whether any particular person is entitled to receive a housing subsidy, the income of his or her spouse (if any) shall be added to that person's income, and "income" shall include:

- i) Basic salary and/or wages;
- ii) Any allowances paid on a regular, monthly or seasonal basis as part of an employment contract;
- iii) Any loan interest subsidy or other remuneration payable regularly on a monthly basis to the individual (and/or to his or her spouse) by his or her employer;
- iv) Any financial obligations met on behalf of the individual (or his or her spouse) by his or her employer on a regular monthly basis;
- v) Any commission payable to the individual (and/or to his or her spouse) on a monthly basis (an average of the most recent 12 (twelve) months will be determined for eligibility assessment purposes);
- vi) Income received through self employment; and
- vii) Any retirement or disability benefits received on a regular (monthly) basis.

**i. Persons who are beneficiaries of the Land Restitution Programme:** beneficiaries of the Land Restitution Programme (LRP), should they comply with other qualification criteria, may apply for housing subsidies in the following manner:

- i) In cases where a serviced site has been provided in terms of the Land Restitution Programme, such beneficiaries may qualify for a housing consolidation subsidy.
- ii) In cases where an unserviced site has been provided in terms of the Land Restitution Programme, such beneficiaries may qualify for a housing subsidy to service the site and for the construction of a top structure.
- iii) In cases where no site has been provided, such beneficiaries may qualify for the purchase of a serviced site and/or a housing subsidy for the construction of a top structure.



**Special Provisions:** Where a LRP beneficiary was awarded a serviced site he/she shall only qualify for the residual of the subsidy amount after the reduction of the cost of the land, and the cost of providing engineering services, but not less than the prevailing consolidation subsidy amount. In cases where an unserviced site is allocated to a LRP beneficiary, the full prevailing subsidy amount available to that beneficiary will be awarded.

**j. Persons classified as military veterans:** Military veterans who are single without financial dependants may also apply for subsidisation. Military veterans can be classified as persons who served under any previous manifestation of the military as well as those persons involved in military operations during the liberation movement. Confirmation of classification of a military veteran must be obtained from South African National Defence Force. Veterans must submit with their application:

- i) Proof of service; and
- ii) Details of social services received.

**k. Persons classified as aged:** Aged persons who are single without financial dependants may also apply for subsidisation. Aged persons can be classified as male and female persons who have attained the minimum age set to qualify for Government's old age social grant.

**l. Persons classified as disabled:** Persons who are classified as disabled, whether single, married or co-habiting or single with financial dependants, may apply for housing subsidies. In addition the MEC may in his/her discretion decide to award the beneficiary the variation of the subsidy.

Furthermore, if a person who has already received state funding for housing and/or who already owns or owned a residential property, is or becomes disabled, or if his or her dependent(s) is/are or become disabled and that person satisfies the other qualification criteria, the MEC may at his/her discretion decide to award the beneficiary the variation of the subsidy.

The variation of the subsidy amount for purposes of improvements to the dwellings for disabled persons is contained in the Variation Manual, included in the Technical and General Guidelines of the National Housing Code.

### 1.3 SECURITY OF TENURE

Persons will only qualify for housing subsidies where they acquire the secure right to occupy, use or own a property in terms of a tenure form which can be registered with a competent authority. Generally subsidies will be made available only to beneficiaries who acquire registered title to a property either in the form of

ownership, leasehold, 99-year leasehold, or deed of grant. Institutions that access institutional subsidies must either own the immovable property or hold registered long-term rights to ensure security of tenure for beneficiaries. In the instance of rural subsidies, beneficiaries must have defined undisputed informal land rights in terms of prevailing legislation.

#### **1.4 THE QUANTUM OF THE HOUSING SUBSIDY**

The Director-General of the National Department will annually announce the Housing Subsidy amount, supported by a detailed cost breakdown that would be applicable for that specific financial year.

The subsidy amount may be increased to cater for special development requirements. The details for the variations of the subsidy amount are contained in the Manual for the Variations of the Housing Subsidy, found in Part C (the Technical Provisions section) of this General Framework.

#### **1.5 BENEFICIARY CONTRIBUTION REQUIREMENTS**

The principle that housing subsidy beneficiaries must contribute towards realising their rights to access the Housing Subsidy Scheme benefits took effect on 1 April 2002. Such contributions could be realised by means of a financial contribution or a contribution in kind, by participating in the building of their houses through the People's Housing Process route.

The contribution requirements are detailed in the respective National Housing Programmes with reference to income, nature of the Programme concerned and indigent persons.

A strategy for the collection of the required financial contributions has been approved. This strategy contains the details regarding contribution requirements, exemptions and collection details.

#### **1.6 HIDDEN SUBSIDIES**

Hidden subsidies refer to the provision of undeclared financial assistance. It is government's policy that:

- a) The housing subsidy must be equitably applied for the purpose for which it was intended;
- b) All other national subsidies must be transparently acknowledged, declared and discounted against the housing subsidy in given instances to obviate duplication of funding from different national resources; and

- c) Additional sub national subsidies must be approved by provincial governments, transparently acknowledged and declared.

### **1.7 VALUE ADDED TAX**

In terms of a ruling by the former Commissioner of Inland Revenue, housing subsidies fall within the definition of “transfer payments” as contemplated in the Value Added Tax Act, 1991 (Act No. 22 of 1991) and is subject to VAT at a rate of zero percent (0%).



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## **2 PART B: TECHNICAL PROVISIONS**

### **2.1 NATIONAL NORMS AND STANDARDS FOR THE CONSTRUCTION OF STAND ALONE RESIDENTIAL DWELLINGS FINANCED THROUGH NATIONAL HOUSING PROGRAMMES**

#### **2.1.1 PURPOSE**

This section contains the minimum National technical norms and standards for the creation of serviced residential stands and houses to be constructed through the application of the National Housing Programme. With effect from 1 April 2007, it replaced the National Norms and Standards contained in the National Housing Code, 2000. All residential developments that will be undertaken through the finance provided in terms of the National Housing Programmes must comply with the norms and standards contained in this section.

#### **2.1.2 INTRODUCTION**

In terms of the provisions of section 3(2)(a) of the Housing Act, 1997 (Act No. 107 of 1997), which came into effect on 1 April 1998, the Minister of Housing must determine national policy, including national norms and standards in respect of housing development. Section 3(3) furthermore provides that the national norms and standards referred to, includes norms and standards in respect of permanent residential structures but are not limited thereto.

The then Minister of Housing introduced such norms and standards in terms of the provisions of the Housing Act, 1997 (Act No.107 of 1997) in December 1998. The Comprehensive Plan for the Creation of Sustainable Human Settlements, approved by Cabinet on 1 September 2004, inter alia advocates the enhancement of the National Norms and Standards for housing products to be delivered through the National Housing Programme. The objective of creating sustainable housing developments through quality and durable products that comply to minimum standards and giving effect to the objectives of the Housing Act, 1997 (Act No. 107 of 1997) is also supported.

In terms of the provisions of section 1 (vi) of the Housing Act, 1997 (Act No. 107 of 1997) which came into effect on 1 April 1998, "housing development" means:

"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:

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

Against this background, the previous Minister of Housing introduced the revised National Norms and Standards, including prescripts regarding the housing typologies that will be financed through National Housing Programmes in future with effect from 1 April 2007.

### **2.1.3 GENERAL PRINCIPLES**

Any specification or definition of norms and standards for affordable housing should ideally be performance based. This encourages innovation by allowing a variety of building systems, materials or techniques to be combined to meet the set performance requirements.

While there are many technologies that can be used to produce a house that will meet a performance specification, it is essential that the resulting structure is acceptable to the community members who are the potential “buyers” of the housing products. It is advisable that the acceptability of any proposed building system is tested in the earliest phase of project development and certainly, before the construction contract relating to the superstructure of the dwellings is officially approved and finalised.

### **2.1.4 RELEVANCE OF THE NATIONAL BUILDING REGULATIONS (NBR) TO AFFORDABLE HOUSING**

The NBR as published in the Government Gazette from time to time apply equally to affordable housing and to luxurious housing developments. The NBR consist of performance standards for buildings, without prescribing how these are to be achieved.

The SABS 0400 publication, relating to the application of the building regulations contains both the NBR and a set of “deemed-to-satisfy rules”. The rules are provided to assist designers to meet the performance requirements set out in the regulations. It deals with conventional construction only, is not regulations, nor does it have the force of law of the NBR. For example:

Deemed-to-satisfy rule HH2.4 requires that the width of any continuous strip foundation shall not be less than 600mm in the case of a foundation to a load-bearing or free standing masonry wall.

There is no need to comply with this rule if in the opinion of an engineer:

- a) Ground conditions are so poor that more sophisticated foundations must be used, or
- b) The combination of building load and founding conditions is such that the strip foundation can be reduced in width, or omitted altogether.

On presenting either alternative to the municipality, it will be accepted as complying with the relevant building regulation, if it is shown to be the result of a rational design by an appropriately qualified, competent person.

#### 2.1.5 PROOF OF COMPLIANCE WITH THE NBR

There are several methods of persuading a municipality that a particular design complies with the requirements of the NBR, namely that the building will be constructed in accordance with:

- a) A design that conforms in all respects with the Deemed-to-satisfy rules set out in SABS 0400;
- b) A certificate issued by the Board of Agrément SA, that is,
  - an Agrément Certificate, or
  - a MANTAG Certificate; and
- c) A rational design prepared by a competent person. Unconventional building methods, systems or components, are covered by an Agrément Certificate. This provides an assurance of fitness for purpose of non-standardised building and construction products and systems, by evaluating these against prescribed performance criteria.

A MANTAG Certificate is a distinct type of Agrément Certificate dealing with:

“acceptable safety and health criteria for houses and related out-buildings, non-residential schools and primary health care centres in areas where the local authority is of the opinion that the type of construction is appropriate, given that in these areas it is of



paramount importance that the buildings be erected at the lowest possible cost.”

“Rational designs” are normally presented in relation to the *structural strength and stability* of a dwelling and much less frequently, in relation to:

- a) Resistance to rainwater penetration;
- b) Damp proofing;
- c) Fire protection;
- d) Lighting and ventilation; and
- e) Drainage.

However, there is a tendency for regulatory authorities that are presented with a rational design, to assume that it covers all aspects of the work. For this reason the National Department insists that the competent person must:

- a) Clearly identify those aspects of the building that are the subject of the rational design;
- b) Inspect for compliance with the rational design; and
- c) Assume full professional responsibility for the subsequent performance of the subjects covered by the rational design.

All aspects of the work that are not the subject of the rational design, must comply with the Deemed-to-satisfy rules of SABS 0400 or be covered by a Certificate issued by the Board of Agrément SA.

#### **2.1.6 THE ROLE OF THE NATIONAL HOME BUILDERS REGISTRATION COUNCIL (NHBRC)**

The NHBRC was established in terms of Section 2 of the Housing Consumers Protections Measures Act, 1998 (Act No. 95 of 1998) as a statutory body with the prime objective to provide consumer protection through the regulation of the home building industry.

In terms of the provisions of the said Act, all home builders must be registered with the NHBRC and a home builder may not commence with the construction of a home unless the home is enrolled with the NHBRC. The NHBRC has also published Home Building Manuals and the technical requirements contained in the said manual are enforced by the NHBRC.

The Housing Subsidy Scheme was made subject to the provisions of the said Act with effect from 1 April 2002 and all houses that are to be constructed through the application of the housing subsidy amount only must be enrolled with the NHBRC and these houses will therefore be subject to the following technical specifications:

- a) The NBR;
- b) The Standards introduced by the NHBRC; and
- c) The National Norms and Standards contained in this document.

The NHBRC requires the results of a geological survey of a particular stand or site and will evaluate the findings of the report and may require that specified precautionary measures be provided in respect of municipal engineering services and/or the dwelling to be constructed.

## **2.1.7 THE NATIONAL NORMS AND STANDARDS FOR STAND ALONE RESIDENTIAL DWELLINGS FINANCED THROUGH THE NATIONAL HOUSING PROGRAMMES**

### **HOUSING LAND**

It is confirmed that for purposes of this document, in accordance with the MINMEC decision, the cost of acquisition of land for housing development is not part of the funding provided through the Housing Subsidy Scheme. Housing land will be acquired in terms of a separate dedicated Housing Land Programme including a separate funding mechanism. The land price in respect of each individual stand will however be taken into account in determining the actual product price of the residential property created through the housing subsidy scheme. This will also be required in terms of the calculation of the NHBRC enrolment fees and to ensure that the subsidy beneficiary is informed regarding the total value of the housing product allocated to him/her.

### **NORMS AND STANDARDS IN RESPECT OF MUNICIPAL ENGINEERING SERVICES**

#### **General conditions**

Bulk and connector services located outside the boundaries of project sites and which are provided by municipalities/service providers must be financed through internal sources of revenue of municipalities or other resources and may not be financed out of the Integrated Housing and Human Settlement Development Grant (IHAHSG).

A municipality may, in instances where it has the capacity, provide additional funds for the provision of municipal engineering services and/or the construction of houses, or a combination thereof, to enhance the end products to be delivered through the National Housing Programmes.

### **Standards for internal municipal engineering services**

The internal reticulation services must be funded from alternative funding resources. However, as a last resort option in cases where no other funding resources are available the internal reticulation services may be funded from the provincial annual housing development funding allocated by the Minister.

The level of the engineering services to be provided is determined by the provisions of the relevant National Housing Programme. For instance, the Programme: Upgrading of Informal Settlements provides for considerable discretion regarding the township layout and infrastructure design and standards. This means that a particular informal settlement layout may be required to ensure higher densities and in achieving this objective, not every residential property may have a road access. However, in general, all residential properties created through the National Housing Programme must at least comply with the levels of services indicated in the following table:

**Table 1: Minimum Level of Services permitted in terms of the National Norms and Standards**

Type of Service	Minimum Level
<b>Water</b>	Single standpipe per stand (metered).
<b>Sanitation</b>	VIP or alternative system agreed to between the community, the municipality and the MEC.
<b>Roads</b>	Graded or gravel paved road access to each stand. This does not necessarily require a vehicle access to each property.
<b>Stormwater</b>	Lined open channels.
<b>Street lighting</b>	Highmast security lighting for residential purposes where this is feasible and practicable, on condition that such street lighting is not funded from the MIG initiative or from other resources.

## **NORMS AND STANDARDS IN RESPECT OF STAND ALONE PERMANENT RESIDENTIAL STRUCTURES (HOUSES)**

### **Minimum size and facilities**

The minimum size of permanent residential structures to be provided by means of the housing subsidy, is 40 square metres of gross floor area.

Each house as a minimum must be designed on the basis of:

- a) Two bedrooms;
- b) A separate bathroom with a toilet, a shower and hand basin;
- c) A combined living area and kitchen with wash basin; and
- d) A ready board electrical installation where electricity supply in the township is available.

### **Technical specifications**

The minimum technical specifications indicated below will be applied to all stand alone houses constructed as part of Project Linked Subsidies, Individual Subsidies, Consolidation Subsidies, Institutional Housing Subsidies and People's Housing Process projects.

Assumptions used to determine the specifications:

- a) Favourable soil conditions (NHBC classification H, S, R, C);
- b) Level Topography;
- c) Maximum 10 meter connection to municipal water supply and sewer; and
- d) The SCCCA is excluded (as a different dispensation is available to these areas).

### **A THE SITE PREPARATION**

The finished ground levels must direct water away from the building.

In areas where termite infestation is known to be a problem, the soil within the site must be treated in accordance with the recommendations set out in SABS 0124 - *Application of certain soil insecticides for the protection of buildings*.

## **B FOUNDATIONS**

### **B.1 Cement**

The correct cement for the purpose intended must be clearly specified and it must comply with the requirements of *SABS ENV 197-1 common cements and SABS 413-1*.

Masonry Cements:

- a) Masonry cement shall not be used in concrete;
- b) Masonry cement MC 22,5X shall not be used in shell bedding mortar; and
- c) Cement for use in concrete, mortar or plaster shall be chosen in accordance with Table 2.

### **B.2 Design**

The foundation of any building must be designed to safely transmit all the loads from the building to the ground without causing or being subjected to excessive movements.

In favourable soil conditions the foundations must be designed to reduce as far as practically possible, the depth of excavation, the height of the foundation walls and the cost of unnecessarily large footings.

Any variation from the foundations required by the Deemed-to-satisfy rules of the NBR must be the subject of a rational design by a Professional Engineer.

In problematic soil conditions, a Professional Engineer must design the foundations and advise on the articulation of the superstructure and all additional prescribed requirements that are deemed necessary.

The minimum foundation specifications are:

- a) External: 500 x 200mm (10Mpa) concrete strip footings;
- b) Internal: 400 x 200mm (10Mpa); and
- c) Founding depth: 400mm.

**C SUB-STRUCTURE: (MORTAR – CLASS II: 1:6 CEMENT SAND MIXTURE)**

140mm cement masonry units (7Mpa) in compliance with SABS specification No.1215 at 4 x courses only.

**D FILLING**

Imported (house area x 300mm x 1.46).

**E FLOOR SLAB**

Any floor of any building shall be:

- a) water resistant in the case of the floor of any kitchen, shower room, bathroom or room containing a Water Closet (WC);
- b) provided with adequate under-floor ventilation in the case of a suspended timber floor;
- c) so constructed that any moisture present in the ground or filling is prevented from penetrating the slab in the case of a concrete floor slab that is supported on ground or filling; and
- d) 75mm (10Mpa) concrete steel hand or power floated without.

**F SUPERSTRUCTURE (MORTAR- CLASS II) 1:6 CEMENT SAND MIXTURE**

**F.1 Walls**

Any wall shall be:

- a) so constructed that it will adequately resist the penetration of water into any part of the building where it would be detrimental to the health of the occupants or to the durability of the building;
- b) provided with the means to fix any roof truss, rafter or beam to the wall in a secure manner that will ensure that any forces to which the roof may normally be subjected will be transmitted to the wall supporting it; and
- c) of combustibility and fire resistance characteristics appropriate to the use of the wall.

The minimum specifications for walls are:

- a) 140mm cement masonry units SABS specification No 1215;
- b) Maximum 10mm bed joint and purpends;

- c) Allow for gable;
- d) Height of external walls: 2400mm (100 x 24); and
- e) Height of internal walls to u/s of roof covering.

**Note: Internal walls to be load bearing roof anchoring**

**Table 2: Cements and their use in concrete (C), mortar (M) and plaster (P)**

SABS ENV. SPEC	DESCRIPTION	SABS ENV. NOTATION	APPROXIMATE EQUIVALENT CEMENTS			USE		
			DESCRIPTION	NOMEN-CLATURE	SABS	C	M	P
<b>COMMON CEMENT</b>								
197-1	Portland Cement	CEM	Ordinary Portland	OPC	471	yes	yes	yes
197-1	Portland Slag Cement	CEM II/A-S	Portland Slag Cement	PC 15 SL	831	yes	yes	yes
	Portland Silica Fume Cement	CEM II/A-D				yes		
	Portland Limestone Cement	CEM II/A-L				yes	yes	yes
	Portland Fly Ash Cement	CEM II/A-V CEM II/A-W	Portland Fly Ash Cement	PC 15 FA	1466	yes	yes	yes
			Portland Fly Ash Cement	PC 25 FA		yes		
197-1	Blast Furnace Cement	CEM III/A	Blast Furnace Cement	PBFC	1491	yes		
<b>MASONRY CEMENTS</b>								
413-1	Masonry Cement	MC 12,5					yes	yes
413-1	Masonry Cement	MC 22,5X					yes	

## G METALWORK

The minimum specifications for metalwork are:

- a) 1.0mm pressed metal clisco doorframes (internal/ external);
- b) Standard 3 mm steel window frames in 1.0mm clisco surrounds;

- c) 2 level lockset internal; and
- d) 3 level lockset external.

**Note: Use of clisco surrounds in window frames, excludes the needs for lintels, dpc and window cills.**

## H GLAZING

Any glazing shall be of glass and be fixed in a manner and position that will ensure that it will:

- a) safely sustain any wind loads to which it is likely to be subjected; and
- b) not allow the penetration of water to the interior of the building.

In accordance with SABS 0173 allow for silicone bead around Clisco frames.

## I CARPENTER

External door frames: External hardwood frames ledged braced batten doors (closed back)

Internal doors: Hollow core masonite clad.

Purlins: 152 x 50mm (S5) SAP purlin beams at maximum 1 m centre to centre tied with 30 x 1,2mm (galvanised) hoop iron straps to masonry (600mm deep) with the maximum span 3,5m/45m<sup>2</sup> units.

## J ROOF

The roof of any building shall:

- a) be so constructed that it will resist any forces to which it is likely to be subjected;
- b) be durable and waterproof;
- c) not allow the accumulation of any rainwater upon its surface;
- d) be constructed to provide adequate height in any room immediately beneath the roof/ceiling assembly; and
- e) have a fire resistance appropriate to its use.

The minimum specification for the roof is:



- f) 5mm full hard galvanised roof sheets, cranked at centre to eliminate ridge capping; and
- g) Fixed with 75. El Toro drive screws to purlin beams.

**Note: 1x ridge purlin beam.**

**K LIGHTING AND VENTILATION**

Any habitable room, bathroom, shower-room and room containing a WC shall be provided with a means of lighting and ventilation which will enable such room to be used, without detriment to health and safety or causing any nuisance, for the purpose for which it is designed.

All dwellings shall be provided with the means of ventilation and natural lighting set out in Table 3.

**Table 3: Criteria for ventilation and natural lighting**

DESCRIPTION	FLOOR AREA OF DWELLING 40M <sup>2</sup>
Minimum window area (light area) for each habitable room, including kitchens.	5% of floor area.
Minimum area of openable windows or controllable ventilation openings for each habitable room, including kitchens.	5% of floor area with one opening having an area of at least 0,1m <sup>2</sup> .

**L FINISHING**

The minimum specifications for finishing are:

- a) External walls to receive Agrément Certified coating system;
- b) Internal wall to be cement slurry-brushed (no paint);
- c) Internal doors to be painted;
- d) External doors to be treated with mixture of linseed oil and turpentine and to be finished with I (one) coat polyurethane varnish;
- e) External ends of purlin beams to be treated with cabolinium;
- f) Allow for fascias and barge boards; and
- g) Allow for 600mm aprons around perimeter of building.

## **M PLUMBING**

Drainage installations shall be:

- a) designed and constructed so that the installation is capable of carrying the hydraulic design load and of discharging it into a common drain, connecting sewer or sewer provided to accept such discharge;
- b) watertight;
- c) capable of sustaining the loads and forces that it may normally be subjected to;
- d) protected against any damage wherever this is necessary; and
- e) capable of being cleaned and maintained through the means of access provided.

Drains shall be laid strictly in accordance with the requirements of the municipality.

French drains and septic tanks shall be constructed to a size and design approved by the municipality.

Non waterborne means of sanitation must comply with the requirements of Section 7.4 of SABS 0252-2: *Water supply and drainage of buildings; Part 2: Drainage Installations for buildings*, all to the requirements of the municipality.

The following minimum facilities must be provided:

- a) Allow for 1 x WC;
- b) Allow for 1 x shower with elevated floor walls and standard trap with trap stop to facilitate washing of clothes;
- c) Allow for 1 x hand basin properly installed; and
- d) Allow for 1 x sink unit properly installed with supporting 25 x 25 x 2mm steel tube frame painted to standard.

## **N STORM WATER**

The design shall provide for suitable means for the control and disposal of accumulated storm water.

Storm water drains shall comply with the requirements of the municipality.

## **O ENVIRONMENTALLY EFFICIENT HOUSING**

### **Water Supply**

The design of the water supply and the specification of devices such as taps, showers and toilets must be in accordance with the aims of the National Water Conservation Campaign.

Reference should be made to the document entitled A to Z of Water Saving Devices published by the SABS and JASWIC, for information on appropriate devices such as:

- a) water conserving taps;
- b) low flow rate shower-heads; and
- c) dual flush toilet cisterns.

Special attention should be paid to the water saving potential of toilet suites that are designed as a unit, to operate efficiently and safely on a standard flush of 4,5 litres instead of the current norm of 9 litres. Those suites that are covered by an Agrément Certificate can be specified with confidence.

Before specifying water saving devices such as low-flow showerheads, the designer must satisfy himself that they will function satisfactorily with the available water pressure.

Water saving measures that are undertaken, must be compatible with imperatives that the water supply and the sewerage disposal systems must be safe and hygienic, and be capable of operating efficiently with only normal and reasonable maintenance.

### **Thermal efficiency**

Designs for affordable housing must take cognisance of the need for the resultant dwellings to be thermally efficient.

The cost constraints imposed by the subsidy scheme make it difficult to meet this requirement. However, there are several principles that, if followed, will enhance the thermal efficiency of the dwelling at minimal cost. These are:

- a) The longer axis of the dwelling should be orientated so that it runs as near east/west as possible;

- b) The dwelling should be compact in plan with the rooms that are used most and the major areas of glazing placed on the northern side of the building to allow solar heat to penetrate the glazing during the winter months;
- c) The roof overhang to the northern wall should be sufficient to shade the windows from midday summer sunshine; and
- d) Windows facing east and west should be limited in number and confined in area to the minimum required for daylight and ventilation.

### 2.1.8 EXCEPTIONS IN THE APPLICATION OF THE NORMS AND STANDARDS

The exceptions are:

- a) The National Norms and Standards will not be mandatory in respect of dwellings and or projects that are developed in terms of the Rural Housing Subsidy Instrument. Rural subsidies may be used for any purpose which, in the discretion of the MEC amount to housing purposes; and
- b) The National Norms and Standards must be applied in respect of dwellings and or projects that are developed in terms of the People's Housing Process with the required discretion to ensure that durable products are developed. For instance, where beneficiaries provide material recovered from previous buildings or obtained in the so called "second hand market", the application thereof must be considered against the objectives of the programme but also in view of the consumer protection objectives of the Government.

The Environmental Guidelines in the following section should also be considered.

## 2.2 BROADER ENVIRONMENTAL GUIDELINES

Environmental issues are inherently linked with the quality of life. Settlements are often strongly influenced by access to resources in the environment. Settlements and the activities that take place in them alter the environment in which they are set. Environmentally sound human settlements are characterised by good air quality, energy and water efficient homes, with planting that provides green 'lungs' or even food security. These may be seen as healthy, sustainable settlements which provide quality living environments. The promotion of settlements with these attributes would bring social, economic and environmental benefits to South Africa.

### 2.2.1 RATIONALE FOR ENVIRONMENTALLY SOUND HOUSING

Although South Africa has introduced a wide range of policies, strategies, programmes and plans to address housing challenges, so far not much has been done to encourage any consideration of environmentally sound practices. The result is that many of the country's residential habitats are smoggy, barren wastelands, which detract from the quality of life of the residents. The South African housing programmes address the housing backlog and demand through various subsidy schemes. Through these, hundreds of low cost houses are being built every day, but most of these are built without any consideration of environmentally sound principles. If these interventions are taken into account at the inception phase of each project, it would ensure that quality of life is attained.

### 2.2.2 PURPOSE AND STRUCTURE OF THE ENVIRONMENTAL GUIDELINES

This section aims to recommend energy and water efficiency initiatives in the housing sector. It focuses on the product being delivered through the National Housing Programme. Therefore, emphasis has been placed on no-cost and very low-cost options throughout this document. Recommended interventions have also been limited to the individual housing sites and structures, as communal services are generally beyond the scope of the housing developers.

## 2.3 COMPONENTS OF ENVIRONMENTALLY SOUND HOUSING

This guideline proposes interventions in the housing product through two major aspects to the development of environmentally sound low cost housing namely sustainable energy and sustainable water.

### 2.3.1 SUSTAINABLE ENERGY

Sustainable Energy Efficient Housing has two components:

#### **Energy Efficiency**

More often than not, in the rush to deliver housing in large numbers in view of the immense backlog, a unique opportunity to provide environmentally sustainable and energy efficient units is being overlooked. The relatively gentle climate that South Africa enjoys has also resulted in a fairly complacent attitude to energy efficient building construction amongst housing developers. The result is that low cost housing is not designed to take advantage of the climate. Houses tend to be cold in winter and hot in summer, and require significant energy

consumption and household expenditure in winter to achieve some level of comfort.

As a result, the energy consumption patterns of low income households in South Africa have emerged as one of the most important factors influencing the national electricity demand and the high levels of air pollution (mainly due to coal used for space heating) experienced in urban areas. If sound energy principles are not incorporated into the design of low cost housing, beneficiaries are condemned to a future of high energy consumption. This situation is exacerbated by local air quality problems, compromised family health and worker productivity, and increased greenhouse gas concentrations.

Energy efficiency can be defined as the realisation of a higher energy service per given unit of energy input. This results in energy conservation which ensures that households can improve their standard of living without necessarily consuming more energy. An energy efficient house is naturally thermally comfortable, makes the best use of available energy and does not require large amounts of energy in its day-to-day running, while minimising negative environmental impact. For housing to be truly energy efficient, the climatic conditions of the particular area in which it is located should be taken into consideration.

Energy efficient housing can be enhanced by two aspects, design considerations for thermally efficient housing and materials and technologies for the construction of energy efficient housing. These are discussed in detail below:

### **Design Considerations**

Energy efficient housing is largely informed by natural elements such as the sun, wind and rain. Therefore, in order to optimise these natural forces' influence on the buildings, the planning, location and orientation of the housing is a critical concern. At a micro-level, the layout of the house also needs to maximise climatic forces.

### **Orientation**

Passive solar design involves applying energy flow principles and climate characteristics of a region in the design, construction and management of houses, so as to achieve thermal comfort with minimal conventional energy input. The basic components of passive solar design incorporate the orientation of the house, optimising the use of direct natural sunlight, and utilising thermally efficient building materials. Applying these principles

provides a low cost or no cost intervention and is applicable in all climatic regions.

Passive solar design can reduce the energy requirements to keep the house comfortable. It implies that houses in the Southern Hemisphere should face towards geographic north in order to obtain optimal solar benefit. Houses which point north have most windows facing north, and as a result they would have the least heat gain in summer and the least heat loss in winter, keeping the indoor air temperature comfortable. The orientation of houses should be an integral part of planning and design.

### **House Plan and Layout**

While the housing unit should face north, the internal arrangement of the living spaces is equally important. The plan should be designed to maximise interior space while minimising exterior wall area, from which heat loss will occur in winter. In other words, housing units should be designed so that the smallest wall area is exposed to the outside and the units should be as close to a square shape as possible. Windows and doors should be placed in the north side of the house to ensure that sunlight enters the house and warms the floor. A roof overhang must be built on the northern side of the house to shade the windows in summer.

Living spaces should be arranged so that the rooms where people spend most of their hours are located on the northern side of the unit. Uninhabited rooms such as bathrooms and storerooms can be used to screen unwanted western sun or to prevent heat loss on south-facing facades. Living rooms and kitchens should ideally be placed on the northern side.

### **Energy Efficient Materials and Technology**

Energy efficiency in housing is not only informed by natural elements like the sun, wind and rain but also by the kinds of building material used, hence the concept of 'passive thermal design'. Passive thermal design entails using appropriate building materials which are able to store heat during the day and release this heat slowly at night. Building materials have properties which influence their performance in terms of energy efficiency. All of these properties affect the flow of heat through the materials and therefore affect the temperatures indoors. Some of these properties include:

- a) The degree to which a material reflects heat;
- b) The capacity of a material to store heat (thermal mass); and
- c) The degree to which a material conducts heat.

## Insulation

Insulation is a key method for ensuring energy efficiency in housing by reducing heat flow into or out of the unit. Insulation effectively keeps a house cooler on a hot day, and warmer on a cold one. Insulation can be achieved by using any number of materials which have very poor conductive properties, or very high reflective properties.

In houses, most heat is lost and gained through the roof. Using a reflective roofing material on the outside is useful, but the installation of a ceiling is generally regarded as a cost-effective solution. A roof without ceiling allows heat to be lost easily in cold weather and may result in overheating in summer. By placing insulation material (such as fibreglass wool, layers of paper or paper pulp, polystyrene sheets or old blankets) directly above the ceiling, households can save almost half of the energy used for space heating in winter.

Walls can also be insulated. There are various methods to insulate a wall. Building a cavity wall (two parallel walls with an air gap between) is seen as the most effective method of insulation, but it is also the most expensive method and therefore not widely applied. Another method is to plaster walls, or to use panels (also called construction boards). These panels are either used as an add-on to the walls and thus function as an insulation layer or to fulfil the wall function themselves and have a structural function.

## Flooring

Floors are an important component to achieve thermal efficiency in houses. Flooring material should be of high thermal mass, such as concrete, bricks or clay, to trap heat and solar radiation coming in through the windows. The heat is slowly released at night. Single storey residential units can basically use the high thermal mass floor slabs and the soil underneath it as thermal mass. Multi-storey residential blocks have the disadvantage that they only have the ground floor with this thermal advantage. Adding thermal mass to upper storeys by adding heavyweight material beyond constructional requirements involves high costs and is often considered to be too expensive.

## Windows

Another prime example of regulating heat flow in low cost housing is through the windows. Big-sized windows should be north oriented to allow maximum heating. Windows can be shaded by a deciduous tree in



the summer, which will lose its leaves in winter to allow the sunshine through. A roof overhang can be built which shades the window in summer, and allows the sunshine in during winter.

**Table 4: Summary of Recommendations and Cost Implications:**

RECOMMENDATION	BENEFIT	COST	RESPONSIBILITY
The longer axis of dwelling units should be orientated as near to East-West as possible, and the most window surface should be on the North side.	Energy Savings to Beneficiaries	No direct cost	ND - Incentives Planners - Concept Developers-Implementation
North walls and roofs of new housing units must not be shaded by neighbouring buildings or landforms.	Energy Savings to Beneficiaries	No direct cost	ND - Incentives Planners - Concept Developers-Implementation
Local climatic conditions such as prevailing winds should be considered when planning a housing development.	Energy Savings to Beneficiaries	Possible marginal Design costs	ND - Incentives Planners - Concept Developers-Implementation
Housing units should be designed, so that the smallest area is exposed to the outside. In other words, units should be as close to square as possible, with rooms where people spend most of their waking hours located on the Northern side of the unit.	Energy Savings to Beneficiaries	No direct cost	ND - Incentives Designers - Concept Developers-Implementation
All housing units should be well insulated in order to ensure energy efficiency.	Significant Energy Savings to Beneficiaries	Cost of material and installation	ND - Incentive Designers - Concept Contractors-Implementation
North-facing windows should be shaded in Summer and sunny in Winter.	Energy Savings to Beneficiaries	Additional building cost (overhang)	ND - Incentive Designers - Concept Contractors - Implementation
Designers should ensure that housing is able to safely accommodate the use of fuels and appliances, and advise households on appropriate and safe fuel use.	Health benefits and reduced cost of fuel	None	DME - Incentives and Awareness

### 2.3.2 SUSTAINABLE WATER

Sustainable water has the following components:

#### **Water efficient low cost housing**

South Africa has limited and erratic rainfall, and is essentially a dry, drought-prone country. Evaporation rates are exceptionally high, and the

ground-water reserves in South Africa are small and increasingly fragile. Year by year, additional sources of water are becoming both more difficult to find and more expensive to develop.

Through the increasing demand resulting from population growth and urbanisation, industrial development and agricultural needs, water is becoming an increasingly scarce commodity. If this increasing demand exceeds the potential supply, we will be faced with a permanent water crisis. In the current policy environment water is now regarded as a national resource. The effective management of this scarce resource, not only in South Africa but also in other Southern African countries, is critical to the continued development of the region in general and the country in particular. It is, therefore, essential that everyone, including housing developers and designers; plays a part in conserving water.

The following components of water efficient low cost housing will be discussed: Design Considerations for Efficient Water Systems in Low Cost Housing; and the use of Water Saving Devices and Technologies.

## **DESIGN CONSIDERATIONS**

### **Layout**

In small buildings, such as low cost houses, very little consideration is given to the layout of plumbing systems. This is mainly due to the fact that building design is often completed and construction started before the plumbing contractor is employed. In such cases, optimal layout is difficult to achieve.

One of the primary causes of persistent water wastage in domestic dwellings is the “dead leg” in the hot water system, a long pipe run from the water heater to a supply point. This causes much cooled water to be drawn off before hot water is discharged. Energy waste is also of concern in this scenario.

### **Pipe Sizing**

The optimum pipe sizing is essential to the performance of many of the water saving devices.

### **Water Pressure**

The pressure at which water is distributed within a building can have an effect on water consumption for a number of reasons. Water supplied to a point of use at a higher pressure than necessary causes wastage because more water is discharged from the tap or other fitting in a given

period of time than is necessary to perform the function (such as rinsing a cup or washing hands). A lower pressure will, in most cases, not detract from the utility of the supply. Higher pressures also increase the amount of water lost due to leakage. While adequate maintenance should be done to prevent leaks, high pressures do make the problem worse when they occur.

The plumbing designer is able to determine what the pressure should be as pressure is controlled by the installation of a pressure reducing valve (PRV). Ideally installed at a point close to where the supply enters the building, the PRV will also ensure that all water supplies in the building are 'balanced' (i.e. both hot and cold water are supplied at the same pressure). This is necessary to avoid problems with the use of mixing devices (such as showers and taps) which, if used with unbalanced supplies, can result in continuous discharge of water from the pressure relief valve of the hot water system. If a balanced system is not used, then the use of mixing fittings should be avoided and the selection of appropriate water-saving devices must be handled with care.

### **Plumbing Fittings**

It is pertinent that the Engineer/Designer for plumbing fittings understand all the various guidelines, policies, standards and best management practices for water supply systems design and plumbing.

## **SECONDARY WATER USE (GREY WATER) AND RAINWATER**

### **HARVESTING**

Grey water refers to the reuse of water drained from baths, showers, washing machines, and sinks (household wastewater excluding toilet wastes) for irrigation and other water conservation applications. Contrary to common belief, grey water is not an entirely "safe" product, as it contains bacteria and other potential pathogens. It should therefore be used with caution.

Rainwater harvesting is the process of intercepting storm-water runoff and putting it to beneficial use. Rainwater is usually collected or harvested from rooftops, concrete patios, driveways and other impervious surfaces. Buildings and landscapes can be designed to maximize the amount of catchment area, thereby increasing rainwater harvesting possibilities. Intercepted water then can be collected, detained, retained and routed for use in evaporative coolers, toilet flushing, pet and car

washing, indoor plant watering, pet and livestock watering, and for lawn and garden irrigation.

### WATER SAVING DEVICES

Advances in technology mean that water-saving devices are continuously being updated and new ones appear on the market on a regular basis. These include the following:

#### Toilet Systems

With the severe affordability constraints in the subsidised housing sector, developers often provide on site sanitation. VIPs and composting toilets are generally regarded as being environmentally sound. However, care must be taken in the design of on site sanitation, as improper design may lead to ground water contamination.

In the case of waterborne sewerage, the most common toilet system in domestic use is one which uses a cistern, usually either low-level or close-coupled. For optimum water conservation a low-volume or dual-flush type should be used. These cisterns should be used with a pan designed to be used with low flush volumes.

#### Taps

Water conserving taps with a lower flow rate than previously accepted as the norm should preferably be selected for all new installations. These are designed to give comparable levels of utility while using less water. Taps fitted over wash basins do not need to provide a high rate of flow. Another option which is suitable in certain situations is the metering tap, which delivers a pre-determined, but adjustable, quantity of water when operated.

**Table 5: Summary of Recommendations and Cost Implications:**

RECOMMENDATION	BENEFIT	COST	RESPONSIBILITY
All plumbing layout and design in low cost housing should be determined in conjunction with the design of the structure	Savings on materials and construction; water & energy conservation	Contractor's fees	ND - Incentives Designers & Contractors - Concept Contractors - Implementation
	Water conservation	Communication costs	DWEA - Awareness and Incentives
"Dead Legs" should be avoided by careful siting of the components of the hot water system	Savings in materials and construction; and water and energy conservation	Possible additional material costs	ND - Incentives Designers - Concept Contractors - Implementation

RECOMMENDATION	BENEFIT	COST	RESPONSIBILITY
Reduce water pressure to an optimal level according to the specifications for the devices used in the plumbing system.	Water savings	Cost of Pressure Reducing Valve (PRV)	DWEA & ND - Incentives Designers & Contractors - Concept Contractors - Implementation
Consideration should be given to the use of secondary (grey) water when designing any new water installation.	Significant water savings	Cost of Devices or additional materials	DWEA & ND - Incentives Designers & Contractors - Concept Contractors - Implementation
It is important to specify the use of a low-volume or dual-flush toilet system.	Water savings	Cost of fitting	DWEA & ND - Incentives Designer - Specification Contractor - Implementation
Choose a low flow tap fitted with a ventilator / flow controller or spray nozzle.	Water savings	Cost of fitting	DWEA & ND - Incentives Designer - Specification Contractor - Implementation
Low flow rate shower heads should be specified for all new installations.	Water savings	Cost of fitting	DWEA & ND - Incentives Designer - Specification Contractor - Implementation

## 2.4 GENERAL CONSIDERATIONS

### 2.4.1 THE SITE

Location and siting are important in terms of energy-efficiency. The following recommendations relate to the site:

- a) Topographic conditions can affect solar radiation. Therefore steep south-facing slopes should be avoided in areas with cold winters;
- b) Existing landforms, trees and buildings cast shadows which should be taken into account when locating a housing development;
- c) Local climatic conditions such as rainfall patterns and prevailing winds should be considered when planning a housing development; and
- d) Site planning needs to be sensitive to the principles of both energy and water-efficiency.

Recommendations which apply include:

- a) Housing units should (as far as possible) face in a Northerly direction, i.e. the longer axis of the dwelling should be orientated as

near to East-West as possible, and the most window surface should be on the North side;

- b) Appropriate indigenous, deciduous trees should be planted to shade the Northern facade of all housing units; and
- c) Reasonable measures must be taken to prevent groundwater contamination by poorly designed sanitation systems.

#### **2.4.2 INFRASTRUCTURE PROVISION**

The following considerations should be taken into account:

- a) Water pressure to the site should be reduced to an optimal level according to the specifications for the devices used in the plumbing system; and
- b) Serious consideration should be given to the use of secondary (grey) water when designing any new water installation.

#### **2.4.3 THE HOUSE**

##### **HOUSING PLAN**

All plumbing layout and design in low cost housing should be determined in conjunction with the design of the structure.

“Dead Legs” should be avoided by careful siting of the components of the hot water system. All exposed pipe work, particularly in roof spaces or on outside walls should also be suitably lagged.

##### **HOUSING ELEMENTS**

- a) All housing units should be well insulated in order to ensure energy efficiency;
- b) Low flow taps fitted with ventilator/ flow controllers or spray nozzles should be used;
- c) A low volume or dual-flush toilet system should be used;
- d) Low flow rate shower heads should be specified for all new installations; and
- e) Appropriate, indigenous, deciduous trees should be planted to shade the North-facing windows and walls of all housing units.

#### **2.4.4 RETROFITTING**

While the retrofitting of energy and water efficient devices and materials has not been discussed within the document, it should be pointed out that

there are ways in which certain cost effective retrofitting can be implemented. For instance, an insulating ceiling can be fitted at any time after the housing unit has been completed.

#### **2.4.5 DANGEROUS PRACTICES**

There are certain housing construction practices that pose a risk to human health. These include:

##### **The use of asbestos building materials**

Asbestos is a dangerous building material. Studies have shown that the inhalation of asbestos dust can cause severe health problems. As there are a number of alternative products which are easily available that do not cost more than asbestos products, and conform to the Standards and Guidelines of the National Home Builders Registration Council (NHBRC), the use of asbestos building products has been totally banned in the construction of houses in South Africa.

#### **2.4.6 DAMP**

Damp in housing is often linked to a higher incidence of respiratory diseases. It is therefore very important that all new housing is adequately damp-proofed, and that the quality of concrete blocks is controlled to ensure that they do not absorb water.

#### **2.4.7 INDOOR AIR QUALITY**

Poor air quality has been linked to a raised incidence of respiratory disease. Dangerous levels of carbon monoxide and smoke have been measured in poorly ventilated new housing where coal, wood and/or paraffin are being used.

#### **2.4.8 EMISSION OF DANGEROUS CHEMICALS**

There are many other building materials and services which can have a detrimental effect on human health and well-being because of harmful emissions. Concrete and granite can emit radon gas, synthetic materials, paints and adhesives release volatile organic compounds, PVC used for pipes, fittings and vinyl floor coverings releases dioxins during manufacturing, use and disposal. These harmful properties should be kept in mind when specifications are drawn up.

### 2.4.9 SITING OF HOUSING DEVELOPMENTS

Care must be taken when siting housing in relation to other land-uses such as landfills, noxious industry or offensive trade. There is environmental health risks associated with such locational issues.







## Technical Guidelines

- 1 Part A: Introduction to the National Housing Programmes
- 2 Part B: Technical Provisions
- 3 Variation Manual**
- 4 Extended Public Works Programme (EPWP) Guidelines
- 5 Housing Subsidy Systems
- 6 Multi Year Planning
- 7 Monitoring and Evaluation



**human settlements**

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Human Settlements  
REPUBLIC OF SOUTH AFRICA



### 3 VARIATION MANUAL

#### 3.1 VARIATION MANUAL (ADJUSTMENT OF THE HOUSING SUBSIDY SCHEME AMOUNT FOR EXTRAORDINARY DEVELOPMENT CONDITIONS)

##### 3.1.1 DEFINITIONS AND ABBREVIATIONS

The following terms and expressions shall have the meanings assigned to them hereunder:

- a) **Precautionary Measures** - *the preventative measures required to ensure a durable product with investment value.*
- b) **Extraordinary Development Conditions** - *conditions that require intensive precautionary measures to ensure a durable product with investment value.*
- c) **Adjustment of Subsidy Amount** - *the quantum with which the subsidy amount must be increased to ensure a durable product with investment value.*
- d) **Geotechnical Conditions** - *geologically related conditions (soil, groundwater, etc.) that can influence the quality of the housing product if precautionary measures are not implemented.*
- e) **Topographical Conditions** - *the natural ground slope of the site that can influence the quality of the housing product if precautionary measures are not implemented.*
- f) **Physical Disability** - *degrees of disability that require special additions or alterations to the housing product.*
- g) **Appropriately Qualified Professional Expert** - *a professional person with the necessary qualifications and relevant experience to provide the required input.*

The following abbreviations shall have the meanings assigned to them hereunder:

MEC	-	Member of Executive Council
ND	-	National Department of human Settlements
NHBRC	-	National Home Builders' Registration Council
CSIR	-	Council for Scientific and Industrial Research
USCS	-	Unified Soil Classification System

SP	-	Sand poorly graded
SM	-	Silty sand
CL	-	Inorganic clays of low to medium plasticity
SH	-	Inorganic clays of high plasticity
PE	-	Potential expansiveness
CDS	-	Category of differential swell
CP	-	Collapse potential
ConP	-	Consolidation potential

### 3.2 BACKGROUND

The new Housing Policy emphasises the provision of durable, quality housing that will have an investment value for the beneficiary. To ensure the achievement of this objective in all circumstances, the adjustment of the subsidy amount will be allowed to finance only the required precautionary measures to cater for extraordinary development conditions. This adjustment will be based on the geo-technical and topographical conditions of the development area and the special housing needs of certain categories of disabled beneficiaries.

With regard to the geo-technical and topographical dimension, the policy provides for professional investigation and qualification of the extraordinary development conditions. It also requires professional designs and specifications, including costing of the required precautionary measures to ensure durable, quality housing provision through the programme.

With regard to the special housing needs of certain categories of disabled beneficiaries, the variation option is focused on the specific housing needs of disabled beneficiaries, or beneficiaries with disabled dependents, and enhancement to their houses to afford them the opportunity of independent living.

### 3.3 PURPOSE

This manual replaces the previous variation system as the intent of the new housing policy is to ensure the delivery of the highest quality housing products that are acceptable to the beneficiaries and that will ensure durable products with investment value.

The purpose of the manual is to provide a basis for decision-making regarding the adjustment of the subsidy amount. The manual addresses all the extraordinary development conditions that might require special precautionary measures. It

specifies the precautionary measures applicable in each case and the cost thereof to facilitate accurate and streamlined decision-making processes.

The manual provides guidelines for the adjustment of the subsidy amount. While it addresses the various areas in the country where special precautionary measures may be required, the application of the subsidy adjustment remains dependant on the professional assessment of each specific development area. The nature of the occurrence of extraordinary development conditions is such that it may be required to assess each stand independently.

All housing applications will be registered on a proper monitoring system that will activate a warning signal if the project falls within predetermined areas where extraordinary geotechnical and topographical conditions may be present. If the Developer has not applied for the adjustment in the subsidy amount, the project application must be returned with a notice that extraordinary geotechnical and topographical conditions may be present and that the necessary investigations must be done and the required information submitted before project approval will be considered. The information supplied (detailed engineering reports) in the Developers' application for the adjustment of the subsidy amount, will be checked against the allowable adjustment for each extraordinary geotechnical and topographical condition for approval. Only the specified allowable adjustment for each condition will be considered.

The manual therefore provides an early warning system together with guidelines for the adjustment of the subsidy amount, once conditions and the required precautionary measures are confirmed.

### 3.4 POLICY STATEMENT

To comply with the objective of the new housing policy:

- a) Developers must investigate the proposed development site for any extraordinary development conditions as identified in the manual before submission of the application;
- b) This investigation and confirmation of the existence of extraordinary conditions must be done by appropriately qualified professional experts;
- c) All precautionary measures must be confirmed and designed by appropriately qualified professional experts;
- d) The construction and/or installation of the precautionary measures must be supervised by appropriately qualified professional experts; and

- e) The responsible appropriately qualified professional experts must certify in writing compliance with the design and construction specifications of the precautionary measures.

Since the Housing Subsidy Scheme provides housing for the poor, certain proposed development sites, or specific areas within a development site, may not be economically viable for housing for the poor. In these circumstances a threshold of 20% adjustment of the subsidy amount on a development site and 30% adjustment of the subsidy amount on a specific erf, excluding adjustment for the Southern Cape Coastal Condensation Area, location of the Development Site and provision for the disabled, will be applicable.

The subsidy adjustment amount for specific conditions will be the same for all levels of beneficiaries.

### **3.5 DEVELOPMENT CONDITIONS THAT REQUIRE SPECIAL PRECAUTIONARY MEASURES, THE MEASURES TO ADDRESS THESE CONDITIONS AND THE QUANTIFICATION OF THE ADJUSTMENT OF THE SUBSIDY AMOUNT**

Any housing subsidy project application that includes an application for an adjustment of the subsidy amount due to extraordinary development conditions will require quantitative verification in the form of a comprehensive report by an appropriately qualified professional expert to the specifications of the NHBRC and the MEC.

The standard housing development registration procedure involves the indication of the precise location of the proposed development in the form of co-ordinates in Latitude and Longitude (WGS 84 system). This information, combined with the national maps included at the end of this Variation Manual, will provide an immediate indication of the possible geo-technical and topographical conditions that may be applicable at a specific area or site.

#### **3.5.1 DESCRIPTION OF GEO-TECHNICAL CONDITIONS AND PRECAUTIONARY MEASURES**

The application for the adjustment of the subsidy amount for geo-technical conditions will have to include the NHBRC Phase I investigation, usually comprising a standard geo-technical soils investigation culminating in preliminary Site Class Designation boundaries, also to be submitted as part of the developers' project enrolment submission to the NHBRC. All Phase I geo-technical investigations must conform to the Geo-technical Site Investigations for Housing Developments: Generic Specification GFSH-2, dated September 2002 and published by the National Department.

All preliminary assessments for the adjustment of subsidy amounts to cater for extraordinary geo-technical conditions will be assisted by the consultation of the appropriate maps (Figures 1 to 8) contained in the Appendix. These Figures are intended to delineate those areas within South Africa where adequate information and confirmation of the specific condition have been made.

To a certain extent, the majority of these categories will require specific site analysis. Any site situated outside the boundaries indicated on these Figures will also require adequate confirmation of site conditions (contained in a NHBRC Phase 1 geo-technical report) before adjustment of subsidy amounts can be approved.

The subsequent Phase 2 investigation is normally completed during the construction phase and entails the mapping of service trenches and the finalisation of Site Class Designations and the completion of enrolment forms.

The following geo-technical conditions have been identified as extraordinary conditions that will require precautionary measures to ensure a quality housing product:

- a) Seepage/Groundwater (see Figure 1);
- b) Verification categories:
  - i) Category 1 - Permanent or perched water table less than 1.0m below ground level;
  - ii) Category 2 - Permanent or perched water table more than 1.0m but less than 1.5 m below ground level; and
- c) Verification Methodology: Figure 1 indicates the areas in South Africa where shallow groundwater (less than 10 m) occurs.

Definitive quantification of seepage/groundwater conditions can only be made through the standard inspection pit profiling required during the completion of the NHBRC Phase 1 geo-technical investigation.

As a standard, the seepage or groundwater level should be measured at the time of profiling and again at least 1 hour after the excavation.



**Table 6: Seepage/Groundwater - Precautionary Measures**

	PRECAUTIONARY MEASURES
Category 1	Subsurface drainage + Improved damp proofing to houses + Dewatering of service trenches during construction
Category 2	Dewatering of service trenches during construction

### 3.5.2 ERODIBILITY OF SOIL

See Figure 2.

#### Verification categories:

**Category 1 (high risk)** - An erodibility index of 1–8 and Unified Soil Classification System (USCS) classification of the upper 750mm of SP (sand poorly graded), SM (silty sand), CL (inorganic clays of low to medium plasticity) or CH (inorganic clays of high plasticity) and ground slope greater than 1:7.5 or degree of dispersion greater than 40%.

**Category 2 (medium risk)** - An erodibility index of 9–15 and USCS classification of the upper 750mm of SP, SM, CL or CH and ground slope greater than 1:7.5 or degree of dispersion greater than 40%.

#### Verification methodology:

Figure 2 indicates the variation in the Erodibility Index in South Africa as determined in a study completed in 1992 for the Water Research Commission.

Site specific information contained in the Phase I Geo-technical Investigation Report should include standard foundation indicator testing including a grading analysis and soil classification according to the Unified Soil Classification System together with double hydrometer tests to confirm if dispersion is suspected (United States Army Corps of USDA Soil Conservation (SCS)).

The provision of these parameters and indications will be used to identify qualifications for subsidy adjustments.

**Table 7: Erodibility of Soil - Precautionary Measures**

	PRECAUTIONARY MEASURES
<b>Category 1</b>	Provision of retaining walls + Earthworks to reduce slopes + Surface drainage
<b>Category 2</b>	Provision of retaining walls + Earthworks to reduce slopes

### 3.5.3 HARD EXCAVATION

Verification categories according to SANS 1200d:

- a) **Category 1** - Hard rock excavation (material that cannot be removed without blasting or wedging and splitting) as % to a depth of 1.5m; and
- b) **Category 2** - Boulder excavation (material containing boulders ranging in size between 0.03m<sup>3</sup> and 20m<sup>3</sup>) to a depth of 1.5m.

**Verification methodology:**

The Phase 1 Geotechnical Investigation Report must identify areas within a development site where the different categories of shallow hard excavation occur.

**Table 8: Hard Excavation - Precautionary Measures**

	PRECAUTIONARY MEASURES
<b>Category 1</b>	Additional cost of trench excavation
<b>Category 2</b>	Additional cost of trench excavation + Additional cost of road excavation + Additional cost of foundation excavation

### 3.5.4 DOLOMITE

See Figure 3.

**Verification categories:**

**Category 1:** Class P (dolomite) and anticipated inherent Risk Class 1 and 2: Dolomite Area Class D2. Site Class designation must be done in accordance with Sections 2.5 and 2.8 of Part 1 of the NHBRC Home Builders Manual.

**Category 2:** Class P (dolomite) and anticipated inherent Risk Class 3, 4 and 5: Dolomite Area Class D3. Site Class designation must be done in accordance with Sections 2.5 and 2.8 of Part 1 of the NHBRC Home Builders Manual.

**Verification methodology:**

Areas underlain by dolomite (including those areas with up to 100m cover of Karoo or other inert overburden material) will also require the additional submission of a dolomite stability investigation report comprising a gravity survey and target percussion drilling.

The well-documented occurrence of dolomite is shown in Figure 3 on a National scale and in more detail in the separate Provincial maps, in particular Gauteng. Included on this latter map are the additional areas of deeper dolomite overlain by up to 100 m of Karoo sediments or other inert overburden material.

The inherent Dolomite Stability Risk Class and Dolomite Area Class will be determined by a thorough dolomite stability investigation comprising a gravity survey and percussion drilling according to accepted norms and under the guidance of the Council for Geo-science.

**Table 9: Dolomite - Precautionary Measures**

PRECAUTIONARY MEASURES	
<b>Category 1</b>	Design and construction of township services in accordance with Section 2.8.3 of Part 1 of NHBRC Home Building Manual + Additional cost of foundations in accordance with Joint Structural Division's COP (1995). L Raft
<b>Category 2</b>	Design and construction of township services in accordance with Section 2.8.3 of Part 1 of NHBRC Home Building Manual L Raft

**3.5.5 EXPANSIVE CLAYS (SITE CLASS H2 AND H3)**

See Figure 4.

**Verification categories:**

**Category 1: (Medium):** Class H1 classified in accordance with Section 2.5 of Part 1 of the NHBRC Home Builders Manual.

**Category 2: (High):** Class H2 classified in accordance with Section 2.5 of Part 1 of the NHBRC Home Builders Manual.

**Category 3: (Very High):** Class H3 classified in accordance with Section 2.5 of Part 1 of the NHBRC Home Builders Manual.

**Verification methodology:**

Figure 4 indicates the areas in South Africa where expansive clays occur. Thus the following criteria should be used to determine the Category for expansive clays:

- a) As a preliminary estimate of the potential ground movements, the unit potential expansiveness (or potential expansiveness or PE) method proposed by Van der Merwe (1975) is suggested.
- b) The empirical method expresses unit potential expansiveness in millimetres of heave movement per metre of potentially expansive profile according to the following ranges:
  - i) Low potential expansiveness - 0mm heave;
  - ii) Medium potential expansiveness - 20mm heave;
  - iii) High potential expansiveness - 40mm heave; and
  - iv) Very high potential expansiveness - 80mm heave.
- c) The alternative and more precise adapted method of Weston (1982) is also advised. Weston's percent swell equation has been adapted to provide a more realistic indication of the swell difference between the projected "driest" and "wettest" conditions. These conditions will be dependent on the prevailing climate at the site but in general has been conservatively established by CSIR research (for 'red soils') as:
  - i) Driest moisture condition =  $0.4 \times (\text{liquid limit} \times \% \text{ passing } 425 \text{ micron})$ ; and
  - ii) Wettest moisture condition =  $0.8 \times (\text{liquid limit} \times \% \text{ passing } 425 \text{ micron})$ .
- d) Weston's percent swell equation is then manipulated for each extreme condition and the swell difference in % is taken as the representative swell for the profile.

e) The Category of Differential Swell (CDS) proposed by Pellissier (JP Pellissier, 1993 : SAICE Journal : Technical Note : Third Quarter : pp 29-32) can then be calculated using the following expression:

- i) CDS:  $L_p \cdot C_m \cdot M_s \cdot 1000 \{ \sum PDE_i \cdot F_i \}$ ;
- ii)  $L_p$ : load factor taking the effect of the perimeter load into account;
- iii)  $C_m$ : climatic factor tacking the effect of the climate into account;
- iv)  $M_s$ : modification factor taking settlement into the overlying soft soil into account;
- v)  $i$ : layer number;
- vi)  $n$ : number of 1m thick layers defined in the expansive profile;
- vii)  $PDE_i$ : potential differential expansiveness for the  $i^{th}$  layer; and
- viii)  $F$ : correction factor for the  $i^{th}$  layer, taking the heave suppression into consideration.

Determination of the required stiffness in detailed raft design is dependent on the perimeter wall load and the correct prediction of the hang-off distance, which in turn is dependent on the swelling properties of the clay, the moisture change due to the building coverage, the heave suppression of the clay and the cushioning effect of any overlying inert layer.

The CDS empirically incorporates the two most important factors controlling the hang-off distance of a raft, and these are the differential swell of the expansive soil and the modulus of reaction of the soil.

**Table 10: Expansive Clays - Precautionary Measures**

	PRECAUTIONARY MEASURES
<b>Category 1</b>	Foundation design, building procedures and pre-cautionary measures in accordance with Table 5 of Section 2, Part 1, NHBRC Home Building Manual:  Modified normal
<b>Category 2</b>	Foundation design, building procedures and pre-cautionary measures in accordance with Table 5 of Section,2, Part 1, NHBRC Home Building Manual:  L raft (low PE 5<CDS<20); Or M raft (med PE 20<CDS<40).
<b>Category 3</b>	Foundation design, building procedures and pre-cautionary measures in accordance with Table 5 of Section 2, Part 1, NHBRC Home Building Manual:  H raft (high PE 40<CDS<60); Or Sp raft (v high PE & CDS>60).

### 3.5.6 COLLAPSING SANDS (SITE CLASS C2)

See Figure 5.

#### Verification categories:

**Category 1:** Class C1 classified in accordance with Section 2.5 of Part 1 of the NHBRC Home Builders Manual.

**Category 2:** Class C2 classified in accordance with Section 2.5 of Part 1 of the NHBRC Home Builders Manual.

#### Verification methodology:

In order to estimate the required raft size (light, medium, heavy or special) the collapse potential proposed by Jennings and Knight (1975) is the suggested determinant.

The collapse potential ( $CP_{200}$ ) of the soil is determined from a single consolidometer test performed on the sample soaked under a loading of 200 kPa. The collapse potential is given by:

$$CP_{200} = \{e_{c2} - e_{c1} / 1 + e_0\} \cdot 100\%$$

WHERE:

- a)  $e_{c2}$  is the measured void ratio of the sample just prior to inundation at 200kPa;
- b)  $e_{c1}$  represents the void ratio of the sample measured just after inundation at 200kPa;

- c)  $e_0$  represents the initial void ratio of the sample at the bedding-in loading; and
- d) The higher the value of  $CP_{200}$  (Collapse Potential), the more severe the problem becomes.

**Table 11: Collapsing Sands - Precautionary Measures**

PRECAUTIONARY MEASURES	
<b>Category 1</b>	Foundation design, building procedures and pre-cautionary measures in accordance with Table 6 of Section 2, Part 1, NHBRC Home Building Manual:  Modified normal; Or  Compaction below footings; Or  Deep strip footings
<b>Category 2</b>	Foundation design, building procedures and pre-cautionary measures in accordance with Table 6 of Section 2, Part 1, NHBRC Home Building Manual:  Stiffened strip footings; Or Deep strip foundations; Or Compaction below footings; Or L raft (collapse potential 1 – 5%); Or M raft (collapse potential 5 –10%); Or H raft (collapse potential 10 –20%); Or Sp raft (collapse potential >20%)

**3.5.7 COMPRESSIBLE SOILS (SITE CLASS S2)**

See Figure 5.

**Verification categories:**

**Category 1:** Class S1 classified in accordance with Section 2.5 of Part 1 of the NHBRC Home Builders Manual.

**Category 2:** Class S2 classified in accordance with Section 2.5 of Part 1 of the NHBRC Home Builders Manual.

**Verification methodology:**

The verification criteria for compressible soils will be similar as for the collapsing sands with the exception that the percent consolidation should be determined using the single consolidometer test, measuring the consolidation potential (ConP) at the loading equivalent to a single-storey house, i.e. 20 kPa to 30 kPa.

**Table 12: Compressible Soils - Precautionary Measures**

PRECAUTIONARY MEASURES	
<b>Category 1</b>	Foundation design, building procedures and pre-cautionary measures in accordance with Table 7 of Section 2, Part 1, NHBRC Home Building Manual:  Modified normal; Or  Compaction below footings; Or  Deep strip footings
<b>Category 2</b>	Foundation design, building procedures and pre-cautionary measures in accordance with Table 7 of Section 2, Part 1, NHBRC Home Building Manual:  Stiffened strip footings; Or  Deep strip footings; Or  Compaction below footings; Or  L raft (consolidation potential 1 –5%); Or M raft (consolidation potential 5 – 10%); Or H raft (consolidation potential 10 – 20%); Or Sp raft (consolidation potential > 20%)

### 3.5.8 MINING SUBSIDENCE

See Figure 6.

#### Verification categories:

**Category 1:** Old under-mining to a depth of between 90 m–240 m below the surface where stope closure has ceased and designation in accordance with Sub-section 2.5 of the NHBRC Home Builders Manual.

**Category 2:** Mining within a depth of between 90 m–240 m below the surface or where total extraction has taken place and designation in accordance with Sub-section 2.5 of the NHBRC Home Builders Manual.

#### Verification methodology:

Figure 6 shows the occurrence of any mining concern within South Africa. This information includes operating mines, existing un-mined resources and abandoned or exhausted mines. These areas by no means indicate that under-mining will be a condition but give a suggestion that further studies will be required to identify the following possible conditions:



- a) Old under-mining to a depth 90 m to 240 m below surface where stope closure has ceased;
- b) Mining to within < 90 m to 240 m of surface or where total extraction mining has taken place;
- c) Presence of un-mined resources and/or long-term mining lease agreements; and
- d) Contamination of sub-soils and/or groundwater by either acid mine drainage (AMD) or high Uranium/Radon levels.

**Table 13: Mining Subsidence - Precautionary Measures**

PRECAUTIONARY MEASURES	
<b>Category 1</b>	Additional cost of foundation design and building procedures as per specialist literature and may include:  Compaction below footings; Or  M Raft
<b>Category 2</b>	Additional cost of foundation design and building procedures as per specialist literature and may include:  Additional earthworks to fill open outcrop; Or  Soil mattress

### 3.5.9 SEISMIC ACTIVITY

See Figure 7.

#### Verification categories:

**Category 1:** Mining induced seismic activity > 100 cm/s<sup>2</sup>.

**Category 2:** Natural seismic activity > 100 cm/s<sup>2</sup>.

#### Verification methodology:

Figure 7 shows the variation in mining induced seismic activity (generally confined to Gauteng and Free State) and natural seismic activity. The lower limit of 100 cm/s<sup>2</sup> has been used as the base level for qualification for subsidy adjustments.

**Table 14: Seismic Activity - Precautionary Measures**

PRECAUTIONARY MEASURES	
<b>Category 1</b>	Additional cost of: Stiffened strip footings; Or H Raft
<b>Category 2</b>	Additional cost of: Stiffened strip footings; Or H Raft

**DESCRIPTION OF TOPOGRAPHICAL CONDITIONS AND PRECAUTIONARY MEASURES**

The report to apply for the adjustment of the subsidy amount for topographical conditions will have to include a contour survey and/or proof that the site falls into the Southern Cape Coastal Condensation Area (SCCCA).

**3.5.10 TOPOGRAPHY OF THE SITE**

**Verification categories:**

**Category 1:** Average ground slope flatter than 1:100.

**Category 2:** Average ground slope of between 1:10 and 1:20.

**Category 3:** Average ground slope of between 1:7.5 and 1:10.

**Category 4:** Average ground slope of between 1:5 and 1:7.5.

**Category 5:** Average ground slope of more than 1:5.

**Verification methodology:**

The topography of the site will be determined by a land survey completed to 1 m contour interval accuracy.

Alternatively, existing published ortho-photographs at a scale of 1:10,000 may be used with a contour interval of not more than 5 m.

The average slope of the site should be measured along a 100 m line in any direction from any of the boundaries of the proposed development site.

**Table 15: Topography - Precautionary Measures**

	<b>PRECAUTIONARY MEASURES</b>
<b>Category 1</b>	Increase depth of sewer trenches + Provision of pumpstations
<b>Category 2</b>	Terracing for houses + Additional earthworks to roads + Stormwater control measures
<b>Category 3</b>	Terracing for houses + Additional earthworks to roads + Stormwater control measures
<b>Category 4</b>	Terracing for houses + Additional earthworks to roads + Stormwater control measures
<b>Category 5</b>	Terracing for houses + Additional earthworks to roads + Stormwater control measures

### 3.5.11 LOCATION OF DEVELOPMENT SITE

**Verification category:**

Location of development site in relation (km) to major centres in Province. Only sites in access of 20 km from major centres will qualify for this adjustment of the subsidy amount. The major centres for each province will be identified by the MEC.

Adjustment of subsidy amount as percentage (%) for material costs in major centres in Provinces.

**Verification methodology:**

The delivery of material for the prescribed 40m<sup>2</sup> house with two trips with a ten ton truck measured in one direction from the major centre to the development site. Bigger houses will be in direct relation to this amount.

The MEC of each Province will determine a percentage with which material costs for housing will be increased (between 1 and 5%) for each major centre.

**Table 16: Location of Development Site - Adjustment Measures**

	ADJUSTMENT MEASURES
<b>Location of development site</b>	Two trips with ten ton truck to deliver material measured in one direction
<b>Adjustment for material costs</b>	MEC determine a percentage increase for material costs for each major centre in the province

### 3.5.12 DESCRIPTION OF PHYSICAL DISABILITIES AND THE SPECIAL HOUSING NEEDS

**Verification categories:**

**Category A:** Needs walking aids.

**Category B:** Partial usage of wheel chair.

**Category C:** Full-time usage of wheel chair.

**Category D:** Partially/profoundly deaf.

**Category E:** Partially/totally blind.

**Category F:** Partially/total movement loss/paralysis in the upper body limbs.

**Verification methodology:**

In order to ensure that housing units delivered through the National Housing Scheme are adjusted to accommodate the special housing needs of a disabled beneficiary (or a member of the beneficiary household) to enable them to live independently, certain additions/alterations are necessary.

**Table 17: Physically Disabled Beneficiaries' Housing Needs - Precautionary Measures**

	PRECAUTIONARY MEASURES
<b>Category A</b>	Installation of fittings to improve quality of life: Access to house (12 m <sup>2</sup> paving, and ramp at doorway) + Kick plates to doors + Hand rails and grab rails + Lever action taps + 1 m vinyl folding door in bathroom + Increase size of bathroom (reduce other rooms)

<b>PRECAUTIONARY MEASURES</b>	
<b>Category B</b>	Installation of fittings to improve quality of life: Access to house (12 m <sup>2</sup> paving, and ramp at doorway) + Kick plates to doors + Hand rails and grab rails + Lever action taps + 1 m vinyl folding door in bathroom + Increase size of bathroom (reduce other rooms)
<b>Category C</b>	Installation of fittings to improve quality of life: Access to house (12 m <sup>2</sup> paving, and ramp at doorway) + Kick plates to doors + Hand rails and grab rails + Lever action taps + 1 m vinyl folding door in bathroom + Increase size of bathroom (reduce other rooms)
<b>Category D</b>	Visual doorbell indicator
<b>Category E</b>	Installation of fittings to improve quality of life: Access to house (12 m <sup>2</sup> paving, and ramp at doorway) + Kick plates to doors + Hand rails and grab rails + Lever action taps + 1 m vinyl folding door in bathroom + Slip resistant flooring + Colour contrast on doorways, stairs, corners of buildings and skirting on walls.
<b>Category F</b>	Installation of fittings to improve quality of life: Access to house (12 m <sup>2</sup> paving, and ramp at doorway) + Kick plates to doors + Hand rails and grab rails + Lever action taps + 1 m vinyl folding door in bathroom + Slip resistant flooring + Increase size of bathroom (reduce other rooms)

### 3.5.13 SOUTHERN CAPE COASTAL CONDENSATION AREAS

**Verification category:**

Housing in the designated area is subject to severe condensation conditions.

**Verification methodology:**

Designated area is indicated on Figure 8.

**Table 18: Southern Cape Coastal Condensation Areas - Precautionary Measures**

PRECAUTIONARY MEASURES	
<b>Condensation occurs on walls and roof</b>	Plaster and paint on all external walls + 6.4 mm gypsum plasterboard ceilings + 80 mm thick glass fibre insulation

The Southern Cape Coastal Condensation Area is depicted in Figure 8 and the towns in the area are listed below:

**Table 19: Towns lying on the Southern Cape Coastal Condensation Area boundary**

1. Albertinia	22. Lindseshof
2. Alicedale	23. Louterwater
3. Barrington	24. Mamre
4. Bathurst	25. Malmesbury
5. Blanco	26. Paarl
6. Bluecliff	27. Port Alfred
7. Ceres	28. Prince Alfred
8. Franschhoek	29. Riebeeck-East
9. Genadedal	30. Riebeeck-West
10. Gouda	31. Riversdale
11. Grahamstown	32. Riviersonderend
12. Greyton	33. Ruitersbos
13. Hamlet	34. Stormsvlei
14. Hankey	35. Suurberg
15. Heidelberg	36. Suurbraak
16. Herbertsdale	37. Swellendam
17. Joubertina	38. Tulbach
18. Kammiebos	39. Uitenhage
19. Katara	40. Villiersdorp
20. Kirkwood	41. Wellington
21. Langholm	42. Wolseley

**Table 20: Towns lying within the Southern Cape Coastal Condensation Area**

1. Addo	58. Loerie
2. Alexandria	59. Malgas
3. Amsterdamhoek	60. Melkbosrand
4. Askraal	61. Milnerton
5. Aston Bay	62. Mosselbay
6. Atlantis	63. Muizenberg
7. Baardeskeerderbos	64. Napier
8. Bellevue	65. Noanaha
9. Bethelsdorp	66. Onrus
10. Betty's Bay	67. Oukraal
11. Bloubergstrand	68. Oyster Bay
12. Bluecliff	69. Pacaltsdorp
13. Boesmansriviermond	70. Papiesvlei
14. Boknesstrand	71. Paradise Beach
15. Botrivier	72. Paterson
16. Brandwag	73. Pearly Beach
17. Bredasdorp	74. Philadelphia
18. Caledon	75. Plettenberg Bay
19. Cape Town	76. Pniel
20. Clarkson	77. Port Beaufort
21. Coega	78. Port Elizabeth
22. Coerney	79. Protom
23. Colchester	80. Riethuiskraal
24. Dana's Bay	81. Rietpoel
25. Despatch	82. Rondevlei
26. Droë Vlakte	83. Salem
27. Elgin	84. Scarborough
28. Elim	85. Sea View
29. Fairfield	86. Sedgfield
30. Firgrove	87. Simon's Town
31. Gans Bay	88. Sinksaburg
32. George	89. Skipskop
33. Gordon's Bay	90. Slangrivier
34. Gouritsmond	91. Somerset West
35. Grabouw	92. Southwell
36. Groot Brakrivier	93. Stanford
37. Groot Jongensfonein	94. Stellenbosch
38. Hartenbos	95. St Francis Bay
39. Hawston	96. Still Bay

40. Hermanus	97. Stormsrivier
41. Hermon	98. Strand
42. Herold's Bay	99. Struis Bay
43. Houtbay	100. Sunland
44. Humansdorp	101. Swartskops
45. Jeffreys Bay	102. The Craggs
46. Kalbaskraal	103. Vermaaklikheid
47. Kareebouw	104. Viljoenskroon
48. Kariega	105. Vlees Bay
49. Kasuka	106. Waenshuiskrans
50. Kenton-on-Sea	107. Wilderness
51. Kleinmond	108. Windmill
52. Klipdale	109. Witsand
53. Knysna	110. Wittedrift
54. Kruisfontein	111. Witteklip
55. Kommetjie	112. Woodsland
56. Kuilsrivier	113. Wydgelëë
57. Kylemore	

### 3.6 VARIATION CALCULATOR

An electronic calculator has been developed for use when calculating the adjustment of the subsidy amount. The formulas used in the calculator are based on the extraordinary development conditions and the subsidy amount available during a specific financial year. Following the adjustment of the subsidy amount, an updated calculator is made available by the National Department of Human Settlement.

To facilitate the evaluation of project applications, the Variation Manual is supported by an automatic variation amount calculator. This calculator operates through the software programme Microsoft Word Excel and is available from the National Department of Human Settlement. The calculator will annually adjusted by the Department in line with the building cost index.

It is important to note that although the calculator can be used to determine variation amounts required for the adjustment of the project cost at project application stages, the actual variation amount must be determined based on professional assessment of the extraordinary development conditions and the costing of the precautionary measures designed by the professionals.

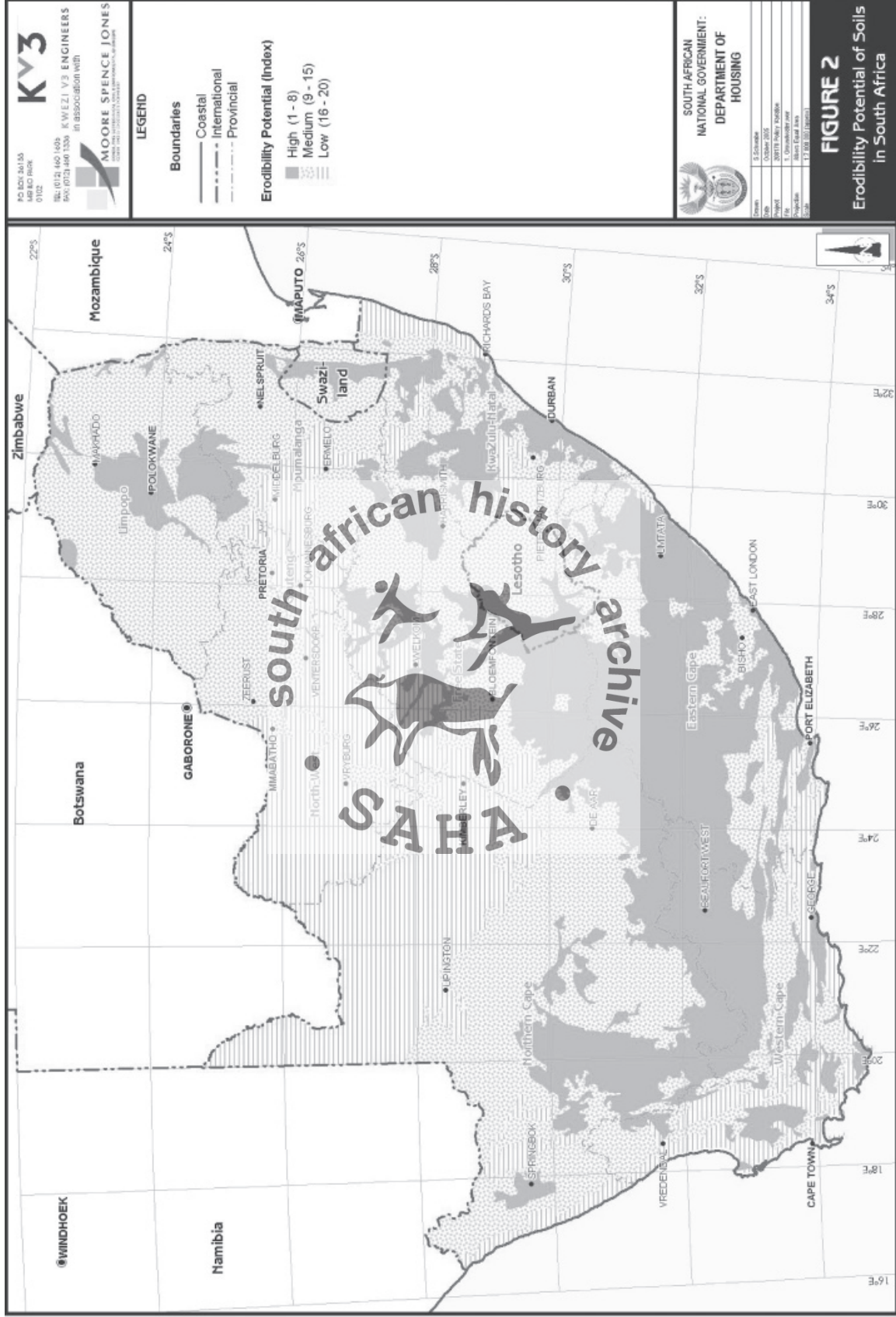


The figures that follow are available in electronic format from the Departmental website:  
[www.dhs.gov.za](http://www.dhs.gov.za).















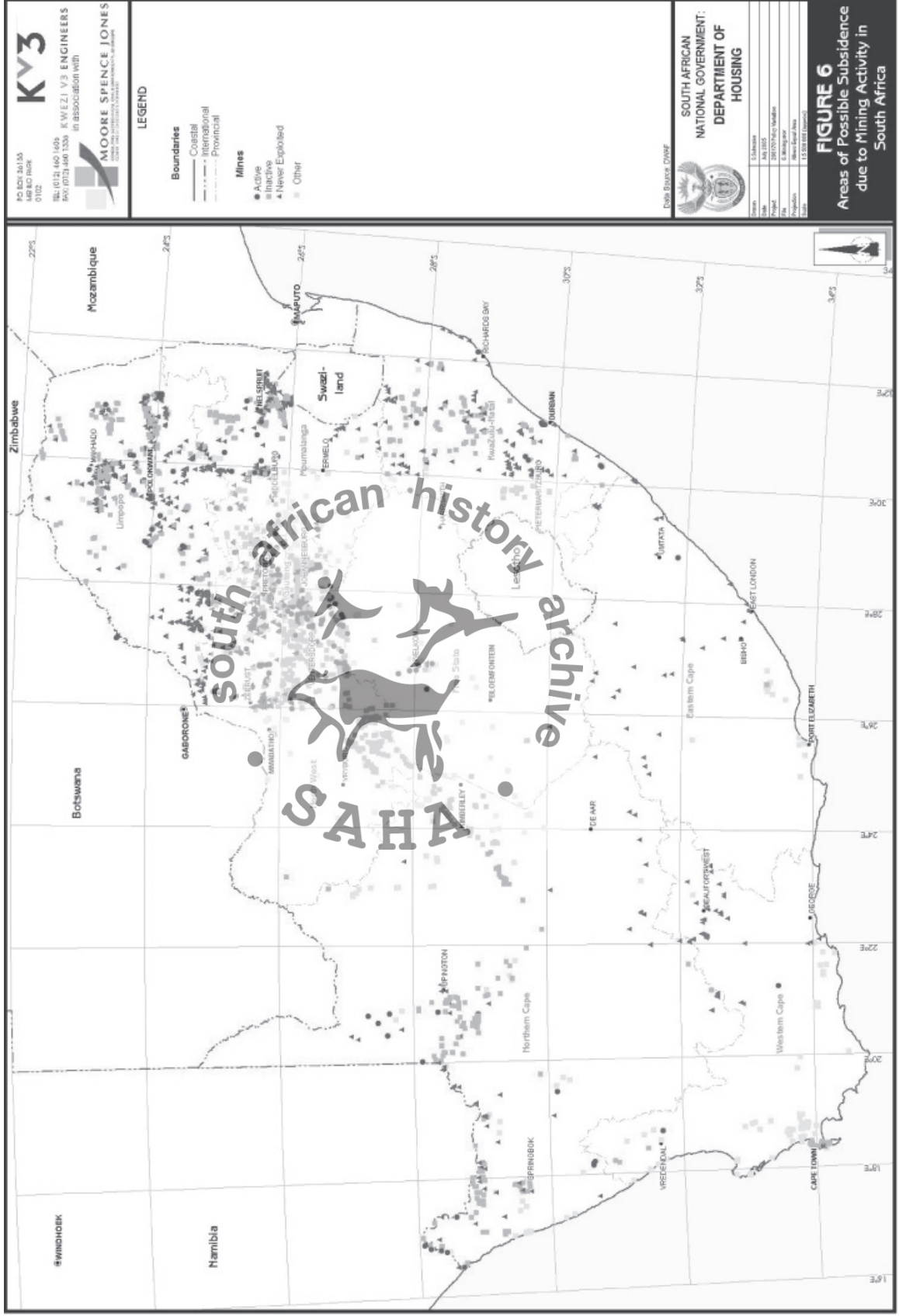
























## Technical Guidelines

- 1 Part A: Introduction to the National Housing Programmes
- 2 Part B: Technical Provisions
- 3 Variation Manual
- 4 Extended Public Works Programme (EPWP) Guidelines**
- 5 Housing Subsidy Systems
- 6 Multi Year Planning
- 7 Monitoring and Evaluation



**human settlements**

Department:  
Human Settlements  
REPUBLIC OF SOUTH AFRICA



## 4 EXTENDED PUBLIC WORKS PROGRAMME (EPWP) GUIDELINES

### 4.1 OBJECTIVE OF THE EPWP

The EPWP is linked to Government's programmes that are intended to address unemployment and increase economic growth, to improve skills levels through education and training and to improve the environment for industry to flourish. It is envisaged that the EPWP will exist until these programmes have assisted in reducing unemployment.

The EPWP:

- a) aims to achieve a large impact in a short time;
- b) will focus on construction, rehabilitation and maintenance activities which offer the best opportunity for the use of unskilled labour. In particular, low-volume roads, trenching, storm water and sidewalks have been identified as areas where construction, rehabilitation and maintenance using labour-intensive methods, will increase steadily over time; and
- c) does not exclude other types of infrastructure and encourages all public bodies to expand the use of labour-intensive methods to other types of infrastructure.

The EPWP is focused on unemployed, under-skilled and under-qualified persons and aims to provide an opportunity to:

- a) draw significant numbers of the unemployed into productive work to enable them to earn an income within the first five (5) years of the EPWP;
- b) provide unemployed people with education and skills;
- c) ensure that participants in the EPWP are able to translate the experience by either enabling them to set up their own businesses or, become employed; and
- d) utilise public sector budgets to reduce and alleviate unemployment.

### 4.2 APPLICATION OF THE EPWP TO THE HOUSING SECTOR

The Housing Sector will be able to contribute directly to the Infrastructure Sector's initiatives for job creation through increasing the labour intensity of appropriate activities in the housing delivery process as undertaken by PDs and municipalities.

The EPWP in the Housing Sector will focus on the provision of services to the stands through labour-intensive activities, where the nature of the work involves trenching for civil engineering services and the construction of sidewalks, low volume roads and storm water drainage systems.

In the Housing Sector there will be strong emphasis on efficiency, cost-effectiveness and quality of end-products when labour-intensive construction methods in civil works, under the EPWP, are introduced. A housing project must be carried out using an appropriate mix of labour and machines

(Contractors will be allowed to use machines for construction activities where it is not technically or economically feasible to use labour.)

All housing construction work will be carried out according to the normal quality standards. Housing development is extensively linked to the National Home Builders Registration Councils Warranty Scheme. Labour-intensive construction does not imply a deviation from or, reduction of standards in terms of quality or specification.

The Housing Sector is expected to apply the “Guidelines for the Implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme” ([www.epwp.gov.za](http://www.epwp.gov.za)) in all future housing projects, unless it can be justified that elements of a housing project, due to site specific conditions, can be excluded from being labour-intensive. These Guidelines were agreed upon by SALGA, National Treasury and the Department of Public Works and provide:

- a) the necessary tools to successfully prepare tender documentation for labour-intensive projects;
- b) sections which should be copied into the relevant parts of the contract documentation for consulting engineers and contractors (The Guidelines conform to the Public Finance Management Act, 1999 (Act No 1 of 1999). The normal tender evaluation processes are followed under the Guidelines, and it is not necessary to apply any special additional preferences for employment creation);
- c) for the incorporation of the necessary contents of the Code of Good Practice for Special Public Works Programmes, which has been gazetted by the Department of Labour. It further provides for special conditions of employment for EPWP projects (for example, the workers are entitled to formal training, which will be provided by training providers appointed by the Department of Labour); and
- d) directives to develop the capacity of the construction industry to manage labour-intensive projects and include an eligibility requirement for the appointment of contractors and consulting engineers (In this respect, their key staff, involved in the EPWP project, must undergo special National Qualification Framework-accredited training programmes in labour-intensive construction.)

The application of the Guidelines will apply to all housing projects and must be made a condition applicable to all developers and implementing agents used by the

PDs for housing projects undertaken directly by the PD and will be applied to all housing projects for which the design process commences after the beginning of the 2004-2005 financial year.

By adopting and incorporating the EPWP Guidelines into its delivery process and contracts for the delivery of services to housing, the Housing Sector will be able to make significant contributions to the EPWP. Use of the EPWP Guidelines means that the requirements are contractually cascaded down to housing agents i.e. the developers, consultants and contractors. Municipalities, who are the main developers for housing, are already required to use the Guidelines when providing services funded through the Municipal Infrastructure Grant or through the Development Bank of South Africa loans. The adoption of the EPWP Guidelines by the Housing Sector will align the sector to the national strategy for delivery of services.

The use of the EPWP Guidelines will make it conditional to design and execute housing projects, particularly the installation of services (which are typically done using capital intensive methods) in a labour-intensive manner. Furthermore, if the operations are organised and managed correctly by the personnel who have been trained in labour-intensive construction, there should be no cause to extend the project execution time/period.

While the use of the EPWP Guidelines should not in the long run increase the cost per unit, in the short term it could have cost implications that could impact negatively on the overall housing delivery. As contractors become more familiar with managing labour intensive projects, this risk will decrease and it is expected that the "labour-intensive premium" will become less significant or disappear altogether. It is important that in the first years, this risk is managed effectively by the PDs.

The EPWP, in the Housing sector, will target the unemployed and marginalised by identifying the:

- i) unemployed, able and willing to work;
- ii) largely unskilled;
- iii) people not receiving social grants;
- iv) the poor;
- v) women;
- vi) people living with disabilities; and
- vii) the youth.

The contractor will be obliged to ensure that every effort is made such that, the expenditure on the employment of temporary workers is in the following proportions:

- i) 60% women;
- ii) 20% youth (who are between the ages of 18 and 35); and
- iii) 2% on persons with disabilities.

The Housing Sector should specifically target women (who bear the brunt of poverty and unemployment) by providing them with training, work experience and an income as stepping-stones to their participation in the mainstream economy.

The PDs, must, to ensure commonality, use the following definitions when projecting the extent to which it is possible to implement labour-intensive contracts:

**Table 21: Definitions for Projections**

<b>Job opportunity</b>	One (1) job opportunity = paid work created for an individual on an EPWP project for any period of time.
<b>Person-years of employment</b>	One (1) person year = 230 days of work/training (i.e. 365 days – 104 weekend days – 10 public holidays – 21 annual leave days) inclusive of paid sick leave. For task-rated workers, tasks completed, should be used as a proxy for 40 hours of work, based on a task completed in a week.
<b>Training days</b>	One (1) training day = at least seven (7) hours of formal training. Formal training is further categorized as – literacy and numeracy, life skills, vocational skills and business skills and includes the assessment of beneficiaries. For each category of training a distinction will be made between accredited and non-accredited days.
<b>Project budget</b>	Actual expenditure (as defined by National Treasury) on projects and supporting infrastructure, including feasibility studies and research but, excluding government administration costs. Expenditure per job created = Total project cost ÷ job opportunities created. This must be reported with and without the cost of research and feasibility studies, as they will inflate the expenditure per job created in the initial period.
<b>Demographic characteristics of beneficiaries</b>	The proportion of beneficiaries who fall into the following categories must be recorded: i) women; ii) youth (i.e. 18-35 years) and iii) disabled. The definitions contained in the Preferential Procurement Regulations of 2001 for these categories of beneficiaries will be utilized.

### 4.3 FUNDING OF THE EXPANDED PUBLIC WORKS PROGRAMME

The EPWP involves reorienting line function budgets and conditional grants so that government expenditure results in more work opportunities, particularly for unskilled labour. EPWP projects will therefore be funded through the normal budgetary process and through the budgets of line-function departments, provinces and municipalities. As a Programme aimed at unemployed persons it must not displace existing workers and contracts.

The Fund is not subject to conditionalities in terms of the EPWP. However, in accordance with policy whereby all organs of the state need to contribute to the EPWP, the Housing Sector will implement the EPWP.

The housing subsidy is an allocated amount against which the PDs are expected to deliver housing units to match the allocation. Funding for housing is primarily from “Specific Purpose Allocations to Provinces” as per Schedule 5 of the Distribution of Revenue Act (DORA).

#### 4.4 INSTITUTIONAL ARRANGEMENTS

##### 4.4.1 NATIONAL DEPARTMENT

Co-ordination of the Housing Sector’s activities, within the EPWP, will be carried out by the National Department. This will comprise the:

- a) provision of guidance and directives relevant to the implementation agents of the EPWP; and
- b) consolidation of the required EPWP statistics from the PDs by using the Housing Subsidy System’s Management Information System to monitor and report on the Housing Sector’s achievements to the Department of Public Works.

In addition, the National Department will:

- c) hold quarterly Task Team meetings, in the first two years of implementation of the EPWP to ensure that the EPWP principles are clearly understood, adopted, implemented, monitored, evaluated and, quarterly reported on; and
- d) submit quarterly reports to the Director-General on the EPWP progress.

##### 4.4.2 PROVINCIAL LEVEL

The PDs will ensure that:

- a) liaison will take place with regional committees in each of the districts of the relevant province for a mentoring, training and technical assistance strategy;
- b) national norms and standards and, effective monitoring and evaluation are applied for auditing purposes;
- c) ongoing communication with delivery agencies is maintained;
- d) provincial partnerships are managed;



- e) participation will take place in the EPWP Provincial Steering Committee structures as per their Terms of Reference;
- f) project approval is aligned to maximise the inclusion of the EPWP;
- g) where relevant, the necessary learnership programme is administered;
- h) project management will take place; maintain the necessary EPWP record keeping and engage in quarterly inspections to labour intensive housing projects; and
- i) the training and development of departmental personnel required to meet the needs of the EPWP, will be put in place.

#### 4.5 OPERATIONALISING THE EPWP

The PDs will operationalise the EPWP, by:

- a) enforcing EPWP conditions onto all housing projects executed either internally or, by agencies;
- b) allocating the EPWP delivery responsibility to a senior official, with support structures, that extend into the Regions within the Provinces;
- c) mandating the responsible senior official to engage with all stakeholders for the purpose of communicating the EPWP and effecting its implementation with training sessions, workshops and engagement of external consultants;
- d) establishing a base line of projected contributions to the EPWP in the next five (5) years and achieving this contribution within the existing operating arrangements;
- e) identifying additional areas and programmes that could be included in the EPWP and, time frames for doing so, should, where applicable and practicable, be included in the individual PDs EPWP plans (In the case of top structures, for instance, additional labour can be achieved with regard to doing site preparation and foundations by hand);
- f) effecting contractual changes to make it mandatory to use the EPWP Guidelines when undertaking housing projects and thereby enforcing labour-intensive construction on the consultants and contractors undertaking the provision of civil engineering services to the sites under contract with developers and implementing agents;
- g) engaging with and contributing to Provincial Steering Committees established for the EPWP purposes; and

- h) engaging with and contributing to the National Department's initiatives and the monitoring and evaluation requirements to manage the EPWP contribution in the Housing Sector.

#### 4.6 ENTERING INTO MEMORANDA OF UNDERSTANDING

In order to give effect to the EPWP, PDs are advised to enter into the following Memoranda of Understanding:

- a) **Memorandum of Understanding between a Provincial Department and the Construction Education and Training Authority (CETA):** A Memorandum of Understanding between the CETA and a PD must be concluded to cover the scope of training, funding of training and the placement of a PDs EPWP beneficiaries in line with the CETA incentives offered to levy-paying employer bodies. It also needs to target trade skills suited to support housing delivery, thereby ensuring a future labour force.
- b) **Memorandum of Understanding between a Provincial Department, the National Department of Public Works and the CETA:** A Memorandum of Understanding between a PD, the National Department of Public Works and the CETA must be entered into in relation to the implementation of the EPWP. Specific Memorandums of Understanding regarding the EPWP learnerships that were secured by the National Department of Public Works, will need to be actively pursued to ensure that the Housing Sector develops labour-intensive contractors capable of delivering in accordance with the EPWP guidelines.

#### 4.7 TRAINING AND SKILLS DEVELOPMENT IN THE EPWP

##### 4.7.1 A BASIC OVERVIEW ON TRAINING AND SKILLS DEVELOPMENT

Training is regarded as a critical component of the EPWP and further information is obtainable from the National Department of Public Works' website [www.epwp.gov.za](http://www.epwp.gov.za).

Every EPWP housing project must have a clear training programme in place that, at a minimum, strives to:

- a) Ensure programme managers are aware of their training responsibilities;
- b) Ensure a minimum of two (2) days training for every 22 days worked;
- c) Ensure a minimum of the equivalent of 2% of the project budget is allocated to funding a skills training programme. This funding may be sourced from the project budget, the National Skills Fund or donors.

It is recognised that training needs will be higher at the start of a project and tail off as projects become more established;

- d) Ensure sustainable training through certification;
- e) Balance functional and entrepreneurship training;
- f) Balance formal training with structured work place learning;
- g) Equip workers with skills that can be used to secure other employment opportunities; and
- h) Identify possible career paths available to workers exiting the EPWP.

#### **4.7.2 BENEFICIARY DEVELOPMENT**

The beneficiaries who will be employed in the EPWP are expected to receive training as per the requirement of the Code of Good Practice for Special Public Works Projects.

The training development framework must be focused, i.e. that beneficiaries will have to focus on the skills that will be critical for the various EPWP housing projects, namely, technical and basic life skills that will lead to certified qualifications.

The training of the EPWP beneficiaries must be linked to potential exit strategies in order to maximize the chances of success of the beneficiaries at the end of their employment in the EPWP. There are a number of possible exit strategies for EPWP beneficiaries, namely, pursuing further skills programmes or learnerships, forming own construction or maintenance companies or also a possibility of being retained by the various employer bodies under normal employment conditions.

With the above principles in mind, arrangements must be put in place between the PD, the CETA, the Employment Skills Development Agency of the Department of Labour, the National Department of Public Works and a number of Employer Bodies regarding the manner in which training and placement of EPWP beneficiaries will be handled.

The placement of EPWP beneficiaries to various employer bodies have to be handled by the Employment Skills Development Lead Employers (ESDLERs). This is a special purpose vehicle that was planned by the Department of Labour to be responsible for the placement of beneficiaries to various construction enterprises in order to gain further experience through on-the-job training in the chosen fields of

qualification, say bricklaying, plastering, painting, and tiling, amongst other things.

In the case where the ESDLERs is not able to assist with the placement, the PD should establish an *ad hoc* committee that will also include the Employer Bodies and Training Providers to specifically look at the placement of EPWP beneficiaries with both public and private sector employers.

The CETA has made a commitment regarding incentives that will be offered to employer bodies, which are able to place EPWP beneficiaries for a minimum period of six (6) months. The incentives will also be offered to employer bodies that are currently contributing to the CETA training levy as required by the Skills Development Act. The purpose of the placement of beneficiaries will be to ensure that they receive practical on-the-job training, while they undergo skills training or learnerships, depending on the scope of work available and the duration of projects they are involved in. The placement will also be subject to a learnership agreement between the Employer, the CETA and the beneficiary (as a learner).

#### 4.7.3 PROVINCIAL DEPARTMENT

PDs are directly involved in the technical aspects of the EPWP delivery and need to have technical staff, within the PDs, fully aware of labour-intensive technologies. PDs should therefore ensure that:

- a) 75% of all Professionally Registered Engineers, employed in the PDs, undertake the NQF 7 qualification in Labour-intensive Training before the end of the 2005/2006 financial year;
- b) 50% of all Technical Staff with, a Higher Diploma, S3 or S4, civil engineering qualification to undertake the NQF 5 Labour-intensive Training before the end of the 2005/2006 financial year;
- c) a further 25% of the Civil Technical Staff undertake this training before August 2005;
- d) 25% of all registered Quantity Surveyors and Technician Quantity Surveyors undertake the NQF 5 or 7 Labour-intensive Training before the end of the 2005/2006 financial year; and
- e) that not less than two members of the Project Approval committee in any PD attend the NQF 7 Labour-intensive Training before the end of the 2004/2005 financial year.

The Human Resource Unit and where applicable, the Capacity Building Unit, in PDs, should be requested to manage, implement and monitor that this training is achieved. The Department of Public Works will through, the CETA and the Public Services SETA facilitate the funding to this effect.

PDs are therefore required to:

- a) convene workshops with all their technical staff and the EPWP Unit in the Department of Public Works to create an EPWP awareness; and
- b) do a technical documentation appraisal to comply with the EPWP Guidelines.

### **A Basic Overview on Labour-intensive Learnerships**

The Department of Public Works has an existing emerging contractor learnership programme that is open to all PDs who would like to develop contractors to execute housing projects labour intensively. In this programme, the PDs will have to allocate training projects to these learner contractors so that they can complete the practical training component of their learnership.

The initiative is to enable emerging contractors to be provided with the necessary skills to become sustainable labour-intensive contractors.

A learnership is a route for learning and gaining a qualification and it provides both structured experience in the workplace and institutional learning with a training provider ([www.epwp.gov.za](http://www.epwp.gov.za)).

The learnership, with a duration of approximately two (2) years, will typically consist of about 35% in-class training and 65% practical on-site training. The negotiated prices for the on-site training projects will be based on prices suggested by the relevant PD which must then be approved by the National Department of Public Works' EPWP unit.

The National Department of Public Works and the CETA will enter into partnerships with a PD for the implementation of these learnerships to develop entrepreneur, business and technical skills. A PD will then sign a Memorandum of Agreement with the National Department of Public Works and the CETA and will have made funding available to provide workplace experience.

The CETA will then provide the trainer, the National Department of Public Works, the mentor and a PD with the work place opportunities for the Learner Contracting Company (the juristic entity formed by individuals who have entered into Learnership Agreements as a team, comprising one (1) contractor at NQF level 2 and two (2) site supervisors at NQF level 4, which individuals are to receive training and independent project experience) to get experience.

In addition to this, support structures have been put in place by the National Department of Public Works, and include:

- a) access to financial services for the Learner Contracting Company to be provided by ABSA; and
- b) community facilitation, to recruit workers, to be provided through the Independent Development Trust (IDT).

A Memorandum of Agreement for the learnerships must be concluded and will include, as a condition, the following:

- a) The requirement that a PD must make a payment to a contractor within two (2) weeks of receiving certification for payment (The number of learner contractors should be determined on the overall budget and the amount of work that a PD would be able to allocate to the contractors during the learnerships but, should also be in line with the amount of work expected to be tendered in the future. After completion of the learnerships, contractors will be expected to tender for contracts independent and the number of contractors exiting should be aligned with the overall amount of work they can tender for);
- b) an open and transparent advertisement and selection process is followed for the recruitment and selection of learners;
- c) Learner contractors will receive classroom and on-site training and exit from the programme;
- d) qualifications, experience and a training credit record;
- e) graduate contractors will qualify for tendering for on-going labour-intensive housing;
- f) projects issued by the housing sector; and
- g) contracts, with consulting engineers for a housing project, include the following clause, as determined in the EPWP:

“the consulting engineer shall process and submit the contractors approved payment certificates to the PD within three (3) days of submittal by the contractor”.

#### 4.7.4 MONITORING AND EVALUATION OF THE EPWP

Monitoring and evaluation of the EPWP has been identified as an important element in the implementation thereof and, will provide information for PD-management to review progress, to identify problems, to make adjustments where needed and to highlight problem areas to be addressed

Information and reporting is also of central importance in terms of monitoring the National Housing Programmes and ensuring that funds are effectively and efficiently spend. Accordingly, the Housing Act, 1997 (Act No. 107 of 1997) requires that information is gathered and reporting occurs. The following five different information systems are operating at national level:

- a) Housing and Urbanisation Information System;
- b) National Housing Subsidy Data Base;
- c) Housing Subsidy System;
- d) Integrated Development Information System; and
- e) Geographic Information System.

The Housing Subsidy System produces a variety of reports and has been tailored to provide additional reports for the EPWP, within the constraints of data capturing.

A PD must:

- i) make it a condition of contract to submit a “labour report” in all conventional civil engineering services contracts. Typically water, sanitation, roads and storm water are undertaken with the standard procurement model of employer consultant and contractor, where this report can be implemented; and
- ii) on a quarterly basis (April-June; July-September; October-December and January-March) report to the National Department, by utilising the EPWP Module on the HSS, on
  - the pre-determined EPWP monitoring indicators;
  - updated five (5) year forecasts;

- iii) link the submission of the EPWP labour report and make it conditional as part of the monthly payment certificate submitted by the contractor; and
- iv) only transfer payment to a developer on condition of the receipt of the required data.

### MONITORING INDICATORS

The following, pre-determined, EPWP monitoring indicators will be included in the reporting service of the EPWP Module of the HSS:

#### Person-years of employment created:

NB : 1 Person year = 230 days of work/training  
 (i.e. 365 days – 104 weekend days – 10 public holidays – 21 annual leave days) inclusive of paid sick leave.  
 For task-rated workers, tasks completed should be used as a proxy for 40 hours of work, based on a task completed in a week

#### Job opportunities

NB : 1 job opportunity = paid work created for an individual on an EPWP project for any period of time.

#### Training days

NB : 1 training day = at least 7 hours of formal training.  
 Formal training is further categorised as: literacy & numeracy, life skills, vocational skills and business skills and includes the assessment of beneficiaries.  
 For each category of training a distinction will be made between accredited and non-accredited training days.

#### Project budget

NB : Project Budget = actual expenditure (as defined by National Treasury) on projects and supporting infrastructure, including feasibility studies and research but excluding government administration costs.  
 Expenditure per job created = total project cost divided by job opportunities created.  
 This must be reported with and without the cost of research and feasibility studies, as they will inflate the expenditure per job created in the initial period.



### Demographic characteristics of beneficiaries

The proportion of beneficiaries who fall into the following categories must be recorded:

- Youth (i.e. 18 – 35 years of age)
- Women
- Disabled

The definitions contained in the Preferential Procurement Regulations of 2001 for these categories of beneficiaries will be utilised.

#### 4.7.5 FLOW OF MONITORING INFORMATION

The internal and external project managers, appointed by the PDs on different housing projects will have to collect the required data at a project level. The data must then be submitted to PDs on a monthly basis as part of their reporting for consolidation into a housing sector report. The HSS module (EPWP) has specifically been developed to facilitate this consolidation.

The various provincial lead sector departments will in turn be expected to consolidate their reports into a sector report and forward the same to the coordinating department.

#### 4.7.6 EVALUATION OF THE EPWP

PDs must subject the EPWP to both internal and external evaluations. This could be in the form of qualitative in-depth evaluations or diagnostic assessments carried out from time-to-time, with the aim of providing policy review guidance, on a necessity basis, but at least annually, to the National Department.

As a minimum, the following, two (2) techniques must be used in the evaluation process and the impact of the EPWP on the Housing Sector:

**Table 22 : Evaluation/Impact Techniques**

Technique	Implementation	Areas Measured	Timeframes
Cross-sectional surveys	Surveys of contractors/ implementing agents, beneficiaries, communities & PD	Profile of beneficiaries & their households; impact of income transfers; impact of assets created; relevance & quality of training; role of contractor (targeting, training, etc); community perceptions of the benefit of the project; efficiency of design & implementation	Years 1-5, surveys to be conducted at the end of the project cycle
Assessment of quality of assets and services	Evaluation of the quality of infrastructure and services against accepted housing norms & standards & National Home Builders Registration Council prescripts	All forms of infrastructure and services	To be undertaken annually

**4.7.7 COMMUNICATION OF THE EPWP**

A PD must ensure that:

- a) a staff induction strategy be developed to ensure that all levels are adequately equipped to run with the EPWP. PDs will be responsible for managing the EPWP and therefore need to be aware of the policy framework and guidelines as well as their responsibilities;
- b) service delivery agents who will, in most cases, be the employer and be:
  - i) responsible for recruitment and existing beneficiaries, be informed about the EPWP, their responsibilities, the norms and standards governing the potential work opportunities and the conditions of funds provided by the Department of Public Works; and
  - ii) that a generic EPWP induction strategy be implemented that, will communicate with potential beneficiaries to ensure that they are aware of the work opportunities offered by the EPWP and, that they all have equal access to these job opportunities. Potential beneficiaries need to know what is being offered, how to apply, the assessment criteria, the responsibilities (norms

and standards) of each party, the duration of the opportunity and the possible exit opportunities.

#### 4.7.8 REPORTING COMPLIANCE

A PD must comply with the following minimum reporting structure:-

- a) by utilising the EPWP Module on the HSS, quarterly reports to be dispatched to the National Department, not later than the seventh working day of the following month, for the quarters, beginning -
  - i) March
  - ii) June
  - iii) September
  - iv) December;
- b) quarterly, consolidated performance reports compared to the EPWP baseline five (5) year forecasts; and
- c) quarterly audit trail reports reflecting transfer payments to contractors.



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## 5 HOUSING SUBSIDY SYSTEMS

### HOUSING INFORMATION MANAGEMENT SYSTEMS

#### Legislative provisions

Section 6 of the Housing Act, 1997 (Act No 107 of 1997) obliges the Director-General of the National Department to establish and maintain a national housing data bank and a national housing information system.

To give effect to this mandate, the National Department has developed the following systems:

#### The National Housing Subsidy Database (NHSDB)

NHSDB represents the official data bank of all the beneficiaries who have received housing assistance from the Government. The data reflect beneficiaries of all the past housing assistance schemes as well as beneficiaries of the Housing Subsidy Scheme and new National Housing Programmes that were implemented since 15 March 1994.

#### Main Functions

The NHSDB fulfills two main functions. It:

- a) serves as the data bank of all housing subsidy beneficiaries;
- b) assists with the evaluation and approval of housing subsidy applications by providing a search facility against the following databases:
  - i) Population Register - to verify citizenship;
  - ii) Deeds Register - to verify property ownership status and history; and
  - iii) NHSDB - searches against the existing records to verify state housing assistance access status.

#### Mandatory use

The National Department is obliged to:

- a) Ensure that approved subsidies on the HSS are uploaded on the NHSDB; and
- b) Provide and conduct a search process against the databases indicated above to ensure that all subsidy applications can be evaluated against the search results.

## The Housing Subsidy System (HSS)

The HSS has been developed and is maintained mainly as an operational and administrative tool for the administration of the National Housing Programmes. In summary the HSS is used for:

- a) Registering and administration of housing projects approved by the MEC;
- b) Capturing and management of applications to access a housing subsidy;
- c) Submitting applications captured for searches against the Population Register, the Deeds Register, the UIF dataset, the PERSAL dataset and the National Housing Subsidy Database; and
- d) Processing and management of project progression payments.

In addition, the HSS also facilitates the:

- e) Capturing of applications against approved housing projects;
- f) Approval of applicants to receive a housing subsidy based on the qualification criteria of the various housing programmes;
- g) Management of approved housing projects based on the rules and requirements of the various housing programmes;
- h) Updating and maintaining delivery information to ensure measurement of expenditure against stated delivery;
- i) Tracking progress based on the contract details as approved by the MEC;
- j) Management of payments within policy;
- k) Management of contract and individual subsidy approval;
- l) Processing of claims against set milestones based on contract specifications; and
- m) Monitoring and evaluating the implementation of approved housing projects.

**Mandatory use**

The mandatory use of the HSS is for the capturing and management of subsidy applications and the management of approved housing development projects as prescribed by the various National Housing Programmes.

In addition to the main functions of the HSS, the system also provides the following additional functions/services:

**The HSS Planning Module**

The planning module provides the mechanism for:

- a) The population of provincial multi-year strategic plans as required by Treasury;
- b) National Treasury performance reporting; and
- c) Expenditure and performance indicators as indicated in the provincial business plans.

**The HSS Budget Module**

This is a budgetary system to enable the project management unit and finance department of the PD to manage expenditure and cash flow processes during the lifecycle of the project. It also provides for the periodic review of provincial housing budgets by subsidy instrument, provincial priorities, programmes and projects.

The Budget Module provides for the following:

- a) Setup and review of budget;
- b) Cash flow management;
- c) Monitoring expenditure vs. budget;
- d) Specifying budget cycles;
- e) Review current status of budget allocations;
- f) Specifying income sources and estimates; and
- g) Reporting.

**The HSS BAS Interface**

The HSS-BAS Interface is used as an electronic payments interface for provinces that use both HSS and BAS.

The interfaces provides for the electronic transfer of approved payment from HSS to BAS to reduce the potential for human error. All payments in terms of the Housing Fund must be done via the HSS BAS Interface.



## The HSS Subsidy Management

This module provides for the:

- a) Tracking of individual applications submitted for approval to receive a housing subsidy;
- b) Monitoring the status of an applicant from application until delivering of product;
- c) Initiation of searches against various databases;
- d) Determination of a subsidy amount for each applicant according to the qualifying criteria; and
- e) Tracking of financial dependants that form part of a specific applicant's household.

It manages the following processes:

- a) Registration of applications in a batch format;
- b) Capturing of application details per applicant;
- c) Execute searches against NHSDb, Population Register and Deeds databases to prevent double subsidies;
- d) Execute searches against the UIF and PERSAL datasets to verify income declared by applicant;
- e) Editing of application details;
- f) Verification of application details; and
- g) Approval of subsidy applications.

## HSS Project and Contract Management

This module provides for the capturing of:

- a) Capturing of project agreement details;
- b) Capturing of project details pertaining to the payment agreements, number of units, size of units, top structure prices, additional subsidies etc;
- c) Facilitating of project progress payment milestones according to policy requirements and updating thereof to track status of project; and
- d) Monitoring progression of projects against milestones.

It provides for the capturing of:

- a) project expenditure milestones against the approved budget of a project and provides a mechanism to capture additional funding requirements;
- b) project applications received and setting of statuses including documents required at various stages, until project approval;
- c) information to enable evaluation of a housing project against predetermined criteria;
- d) interest rates applicable for an approved housing project;
- e) information related to companies responsible for infrastructure provisioning;
- f) the geographic location of an approved housing project;
- g) expenditure priorities as approved by MINMEC;
- h) previous state expenditure towards the sites in an approved housing project;
- i) product details (Site size, site price, Top Structure Size, Top Structure Price);
- j) information related to companies constituting the professional team including profile of company associated with an approved housing project;
- k) the number of subsidies planned per subsidy bracket;
- l) progress inspection information;
- m) amounts to be paid at fixed milestones including tranche payments;
- n) information related to the status of township establishment;
- o) and the updating of contract and addendum information; and
- p) Tranche Payment Redemption Milestones.

### **The HSS Claims Management**

This module provides for:

- a) Payment of project funding against approved beneficiaries and companies, payment milestones and contracts;
- b) Cumulative payment monitoring and recording and reporting of expenditure incorrectly administered;

- c) Reconciliation of individual subsidies paid to banks; and
- d) Capturing of General Ledger entries.

With regard to funding administration the HSS facilitates the following processes:

- a) Capturing of claims against fixed project milestones based on contractual agreements;
- b) Authorisation of claims against fixed milestones and verifying whether the required documentation was submitted;
- c) Reconciliation of advance payments;
- d) Reconciliation of payments on HSS based on information from BAS; and
- e) The issuing of various reports required for payment approval.

### **The HSS Online**

This module facilitates the following:

- a) The capturing of Subsidy Applications;
- b) The capturing of payment Claims by saving it to a local database and upload it in batches at a later stage;
- c) Project Progress Management by means of Online capturing of project progress information;
- d) Status Reports for management and users to enhance operational efficiency and monitoring housing delivery related to:
  - i. ABC Statistical Information
  - ii. Application Status
  - iii. Audit
  - iv. Budget
  - v. Financial Reports
  - vi. Indicators
  - vii. Project Reports
  - viii. Project Status
- e) Managing of daily search process
- f) Entry point to HSS BAS Interface.

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## 6 MULTI YEAR PLANNING FOR HUMAN SETTLEMENTS DEVELOPMENT

### 6.1 OVERVIEW

The Comprehensive Plan for the Creation of Sustainable Human Settlements (Comprehensive Plan) requires proper planning for housing development that follows a coordinated and funding aligned approach. Section 7(2)(g) of the Housing Act, 1997 (Act No 107 of 1997) also requires provinces to compile multi-year housing development plans. This Act further requires that-

“every municipality must, as part of the municipality’s process of integrated development planning, take all reasonable and necessary steps within the framework of national and provincial housing legislation and policy to initiate plan, coordinate, facilitate, promote and enable appropriate housing development in its area of jurisdiction”.

The Public Finance Management Act, 1999 (PFMA) (Act No 1 of 1999) also requires provinces to compile and submit five year Strategic Plans, Three year Annual Plans and yearly Operational Plans. Operational Plans require provinces to report quarterly on project progress in respect of the current financial year.

The prescribed National Treasury Strategic Planning document was adjusted and merged with the requirements of the provincial multi-year housing development plans to provide for a single and coordinated planning process. This planning dispensation is aimed at assisting provincial departments to plan in a structured manner.

Planning templates based on the Comprehensive Plan on National Housing Programmes were developed as an aide for provinces to achieve scientific multi year plans. These templates were designed for each of the National Housing Programmes and have been aligned with the provisions of the prevailing Division of Revenue Act, (DORA), which provides for monthly reporting on each project that was allocated funding and covers the first year of each MTEF period.

### 6.2 THE APPLICATION OF THE PROCESS OF COMPILING THE TREASURY STRATEGIC PLAN

The compilation of the Treasury Strategic Plan entails a scientific approach to enable provinces achieve actual delivery within a specific period. The following key principles are applicable:

- (a) The planning process at provincial level entails a bottom up approach that commences at municipal level, where Integrated Development Plans (IDPs) form the basis for provincial strategic plans and such provincial plans will inform the

national plan. The foundation for planning processes is thus approved IDP's with clear housing dimensions. Housing Chapters of the IDPs were developed to assist with the planning of housing development projects during the compilation of the IDPs.

Planning for housing development projects must be based on the project life cycle, creating the ability to deliver each aspect of the project over the life cycle of each project to ensure that the allocation and expenditure of funding is synchronised.

(b) The required provincial planning entails the following:

- A five year strategic plan, linked to the electoral cycle which commenced in January 2005. This plan remains valid and in place until 2010.
- An Annual Plan (MTEF period) that deals with programme and project implementation over the MTEF period. This plan is updated annually and also adjust the strategic five year plan.
- Annual (operational) plans that covers the current financial year and upon which quarterly progress reports are required by National Treasury.

(c) The provincial plans as outlined above must cater for:

- The National Housing Programmes;
- Approved IDPs/Housing Chapter of the IDPs;
- Agreed and coordinated National, Provincial and Municipal priorities for housing development.

(d) The planning process at provincial level should be guided by section 16 the Intergovernmental Relations Framework Act, 2005 (Act No 13 of 2005), which provides for the establishment of a Premier's Intergovernmental Forum to promote and facilitate intergovernmental relations between the province and local governments in each province. Section 18 of this Act provides that this Forum is a consultative forum to discuss and consult on matters of mutual interest including inter alia –

“(vii) the co-ordination of provincial and municipal development planning to facilitate coherent planning in the province as a whole”.

The Premier's Intergovernmental Forum should be used to determine housing development planning priorities and agreements on the annual allocation of MTEF Housing funding provided by National Government for the implementation of the National Housing Programmes. The agreements reached by the Forum

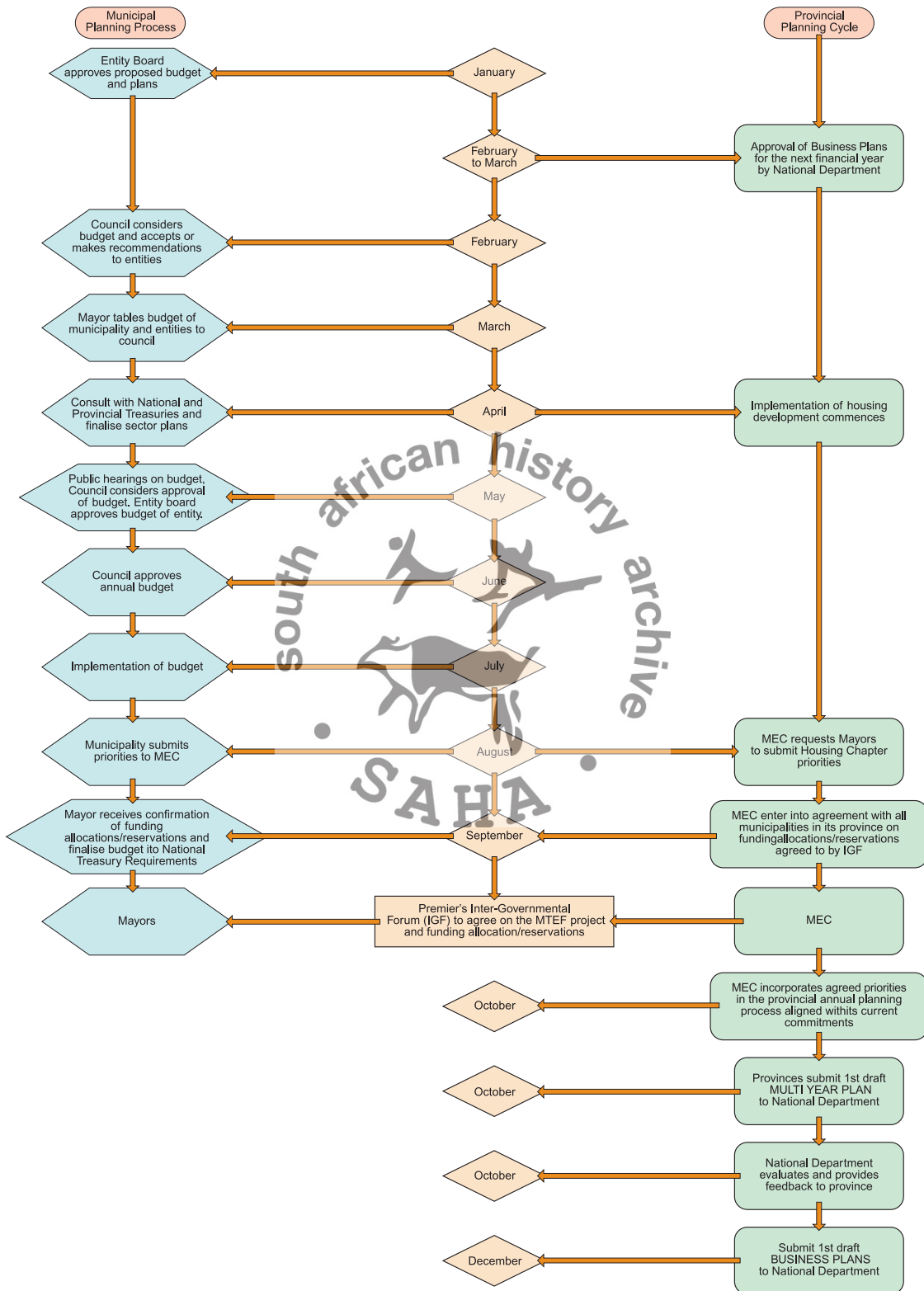
should constitute confirmed funding reservations. Once agreements are achieved, the municipality will be in a position to confirm planning priorities with the communities in its area of jurisdiction and conclude social contracts with communities.

(e)The following flowchart illustrates the linkages between the provincial and municipal planning cycle in terms of housing development.





## PROVINCIAL AND MUNICIPAL ANNUAL PLANNING CYCLE



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## 7 MONITORING, EVALUATION AND IMPACT ASSESSMENT STRATEGY FOR THE HOUSING SECTOR

### 7.1 THE MANDATE FOR MONITORING, EVALUATION AND IMPACT ASSESSMENT (MEIA) IN THE HOUSING SECTOR

The mandate for MEIA in the housing sector emanates largely from the following prescripts:

#### a. The Housing Act ,1997 (Act 107 of 1997)

##### i. Section 3 (1) of the Act states:

“... The National Government acting through the Minister must, after consultation with every MEC and the National organisation representing municipalities, as contemplated in Section 163 (a) of the Constitution, establish and facilitate a sustainable, national housing development process”.

##### ii. Section 3 (2) (c) of the Act then states that:

“for the purposes of Subsection (1) the Minister must”... , *inter alia*:

“Monitor the performance of the National Government and, in cooperation with every MEC, the performance of provincial and local governments against housing delivery goals and budgetary goals.”

##### iii. Section 4 (i) states that the Minister may:

“evaluate the performance of the housing sector against set goals and equitableness and effectiveness requirements.”

It is therefore apparent that the Housing Act, 1997 (Act 107 of 1997), as the single most important piece of legislation underpinning housing delivery, places the responsibility on the Minister, through the three spheres of Government, to produce meaningful, qualitative and quantitative information on the implementation, progress, outcomes and impact of national housing policies and programmes, as well as the housing sector as a whole.

## **b. The Government-Wide Monitoring and Evaluation System.**

During 2004, the Governance and Administration Cluster was mandated, as a result of the emphasis placed on the importance of monitoring, evaluation and reporting in Government by the President in his State of the Nation Address, to design and implement a Government-Wide Monitoring, Evaluation and Reporting Framework.

The first step in realising this objective was the development of a Government-Wide Monitoring and Evaluation System (GWM&E System). The rationale for the GWM&E System was to provide decision-makers, in all Government agencies, departments and local governments with easy access to regular and reliable information that would contribute towards the management of their own processes by revealing which of their practices and strategies worked well and which needed to be changed or improved.

It was noted that while each Department has its own particular areas of concern and that each Department will require its own unique framework for its particular analytical purposes. However, generic information reporting, that straddles the entire spectrum of Government, will be required, eg. spending and budgetary information required by National Treasury, or the performance of departments with regard to the implementation of Government's Programme of Action. The GWM&E System is expected to cater for this requirement, and it is envisaged that the information required would be detailed and accurate and be generated by regular, integrated management processes rather than through separate procedures. Furthermore, it is anticipated that the information, eg. on progress with the implementation of programmes would not only focus on the inputs, outputs and outcomes but will also periodically assess the impact of the strategic objectives.

The objectives of this GWM&E System are to:

- i. contribute towards improved governance by enhancing the collection, collation, analysis, dissemination and application of information on the progress and impact of policies, programmes and projects in order to ensure transparency and accountability; and
- ii. promote service delivery improvement and compliance, in line with statutory and other requirements.

The GWM&E System aims to:

- i. deliver useful information and analysis;
- ii. improve monitoring and evaluation practices and capacity;

- iii. promote the emergence of a learning culture in the public sector; and
- iv. contribute to better public management in South Africa.

The GWM&E System will focus on:

- i. essential elements of results-based monitoring and evaluation;
- ii. a strengthened role of the monitoring function within the three spheres of Government;
- iii. the presentation of a more integrated approach to the monitoring and evaluation in Government;
- iv. the introduction of simplified, streamlined and harmonized procedures in-line Government's results-orientated framework for monitoring and evaluation;
- v. The provision of guidance on the assessment of results within the context of Government's Programme of Action and its priorities; and
- vi. stressing that monitoring and evaluation are important management functions aimed at ensuring quality of interventions and supporting decision-making, accountability, learning and capacity development.

The GWM&E System is expected to provide:

- i. accurate and reliable information on progress in the implementation of Government and other public sector programmes;
- ii. information on the outcomes and impact achieved by Government and other public bodies; and
- iii. continuously improved quality of monitoring and evaluation practice in Government and public bodies.

Each Department or public body will be required to provide information to the GWM&E System on:

- i. achievement of targets in terms of performance indicators included in their strategic plans;
- ii. progress made in relation to Government's Programme of Action; and
- iii. impact studies for each programme undertaken at least every five years.

In addition, each Department or public body will need to determine procedures and processes appropriate to their own operations to be able to fulfill this mandate.

The Presidency has provided guidelines to support “the improvement of the collection and the collation, analysis, dissemination and application of information on the progress and impact of programmes in order to ensure transparency and accountability and to promote service delivery improvement and compliance with statutory and other requirements, as well as a learning culture in the public sector”. (Proposal and Implementation Plan for a Government-Wide Monitoring and Evaluation System, September 2005). The housing sector is required to provide the GWM&E System with accurate and reliable information on the performance of Government’s programmes and the effectiveness and efficiency of service delivery in the sector. In order to adhere to this responsibility, processes and procedures are being put into place to measure, monitor and evaluate performance and service delivery. The ND is now redirecting its efforts to ensure that its approach to MEIA encompasses the tenets of the GWM&E System and the ND will align the housing sector monitoring and evaluation processes to the GWM&E Plan.

**c. The Comprehensive Plan for the Development of Sustainable Human Settlements (the Comprehensive Plan)**

The Comprehensive Plan as approved by Cabinet, also in 2004, makes provision for interventions to be undertaken to enhance data collection, management information, monitoring and evaluation and performance measurement. In this regard, specific reference is made to the need to provide more confidence in the quality of Housing Subsidy and Expenditure Data and therefore the need for a new strategy to improve data input and interpretation. The Comprehensive Plan mandates the ND to ensure that :

- current systems of both the ND and provinces are brought up to date and confirmed; and
- new systems and procedures are instituted to enhance the existing management information systems of the ND, provinces and municipalities.

Provision is also made for Performance Monitoring and the ND has been committed to develop a comprehensive housing sector monitoring, information and reporting system based on key performance indicators. It is noted that this system must be capable of regular, structured reporting on the performance (quantitative as well as qualitative) of the various housing programmes and housing institutions. This information should be used to support policy development and enhancements and should form the basis for developing reports to institutions established in terms of Chapter 9 of the Constitution (e.g. Human Rights Commission, Office for Women etc.), Parliament and international agencies such as UN Habitat.

Furthermore, the various Business Plans highlight the need to monitor and evaluate each of the housing programmes to ensure delivery as intended and to learn lessons that will enhance policy, programmes and delivery. Implicit in the Comprehensive Plan, also, is a need for a Monitoring and Evaluation Policy which will assist the ND determine, *inter alia*, whether and how the housing policies and programmes are working as intended and what needs to be done to enhance the policies and programmes, and in this way assist in enhancing housing delivery.

#### **d. State of the Nation Address**

In his State of the Nation Address on 9 February 2007, the State President said that:

“many of the weaknesses in improving services to the population derive in part from inadequate capacity and systems to monitor implementation. As such, in the period leading up to 2009, the issue of the organization and capacity of the state will remain high on our agenda.”

In addition he added, *inter alia*, that there was a need to:

“...develop a proper database of households living in poverty, monitor progress in these households as the programmes take effect in graduating them out of poverty”.

## **7.2 APPLICATION OF MEIA**

### **7.2.1 OPERATIONALISING THE MANDATES**

It is evident therefore that the ND's thrust for a very highly structured, effective and efficient MEIA system is predicated on the emphasis placed on MEIA by the State President, Government in general and the housing sector, in particular. In order to meet the requirements of the combined mandates therefore, the ND must provide a system that will monitor and evaluate every aspect of the State's housing developmental agenda and in this way pave the way for enhanced policies, programmes, service delivery and greater beneficiary satisfaction.



## 7.2.2 THE NATIONAL DEPARTMENT'S RESPONSE TO FACILITATE THE ACHIEVEMENT OF THE MANDATES

### 7.2.2.1 ENHANCED ORGANISATIONAL STRUCTURE

The ND has made provision in its new organisational structure for a Monitoring and Evaluation Unit. The purpose of this unit is to coordinate the monitoring, evaluating and reporting on the National Housing Policies and Programmes, the adherence to project and programme planning, the implementation and delivery processes and the assessment of the impact of Government's programmes in all provinces.

Within the framework of the GWM&E System, the Monitoring and Evaluation Unit will be responsible for:

- i. monitoring and evaluating the planning, implementation and performance of national housing policies and programmes against set targets and approved guidelines and the tracking of construction processes;
- ii. assessing the impact of national housing policies and programmes and developing and coordinating the implementation of an evaluation strategy;
- iii. monitoring occupancy audits; and
- iv. managing and coordinating the implementation and maintenance of the Monitoring and Evaluation system.

In addition, the Unit will, within the ambit of the Government-Wide Monitoring and Evaluation Plan undertake to :

- i. align the housing sector monitoring and evaluation processes to the Government-Wide Monitoring and Evaluation System;
- ii. prepare a Monitoring and Evaluation Policy for the Housing Sector;
- iii. finalise the Monitoring, Evaluation and Impact Assessment (MEIA) Framework for the Housing Sector and the Indicator Protocol;
- iv. prepare the MEIA Implementation Plan for the roll out of the MEIA Framework;
- v. finalise the MEIA application systems;
- vi. prepare a Monitoring and Evaluation Policy and Implementation Guidelines for Service Delivery in the Housing Sector; and
- vii. develop processes to capacitate national and provincial officials.

## 7.3 OPERATIONAL MATTERS

### 7.3.1 COLLABORATION

In an attempt to perform the functions outlined above, the Unit will work in close collaboration with various line functionaries within the Department, the PDs and municipalities. In addition, the Unit will focus on the products delivered with the funding made available through the conditional grant. Non-financial information will be obtained through the Housing Information Systems of the Sector Information Services Unit.

### 7.3.2 INITIATIVES

In order to meet the requirements of the mandate set out in Section 2.2 above, the Monitoring and Evaluation Unit will undertake the following initiatives to establish a Comprehensive Monitoring and Evaluation Strategy (CMES):

- i. A Monitoring and Evaluation Policy for the Housing Sector
- ii. The Monitoring, Evaluation and Impact Assessment Framework for the Housing Sector and the Indicator Protocol
- iii. Monitoring and Evaluation System (MEIA System)
- iv. Implementation Plan
- v. Policy and Implementation Guidelines for Service Delivery in the Housing Sector
- vi. Capacitation of national and provincial officials

### 7.3.3 A MONITORING AND EVALUATION POLICY FOR THE HOUSING SECTOR

The Monitoring and Evaluation Policy for the Housing Sector (M & E Policy) will set the basis for the development and implementation of the MEIA system. The purpose of this policy will be:

- i. To monitor and evaluate results and impacts of the Comprehensive Plan Strategies
- ii. To provide a basis for decision-making on amendments and improvements of policies, strategies, program management, procedures, and projects
- iii. To promote accountability for resource use against objectives by national and provincial departments and municipalities; and

- iv. To ensure documentation of feedback and the dissemination of results and lessons learned.

The M & E Policy will form the basis for all monitoring, evaluation and impact assessment studies. It will, inter alia, outline the broad activities, processes and procedures to be carried out in order to allow the Housing Sector to report on meaningful qualitative and quantitative information on the implementation, progress, outcome and impact of all national housing policies and programmes. It will also focus on outlining the methodology to be adhered to when conducting monitoring and evaluation and determine what data should be regulated to maintain confidentiality without compromising transparency. In addition, it will define the roles and the responsibilities of the different stakeholders, the consultative processes to be entered into etc.

#### **7.3.4 THE MONITORING, EVALUATION AND IMPACT ASSESSMENT FRAMEWORK FOR THE HOUSING SECTOR AND THE INDICATOR PROTOCOL**

The Monitoring, Evaluation and Impact Assessment Framework (M & E Framework) will be “a comprehensive planning document for all monitoring and evaluation activities, (which) documents the key M & E questions to be addressed, what indicators are collected, how, how often, from where and why they will be collected, baselines, targets and assumptions; how they are going to be analysed or interpreted, and how or how often reports will be developed and distributed on these indicators”.

The Indicator Protocol will measure the various levels of results in the housing sector based on the requirements of the Comprehensive Plan.

The:

##### **a. Goal of the M & E Framework**

The goal of the M & E Framework would be to track the progress of the housing sector in the development of sustainable human settlements, by checking and assessing whether programme results meet the predetermined objectives and whether the interventions are yielding the required results.

b. Aims of the M & E Framework

The M & E Framework will aim to:

- i. define a list of core indicators that will allow for the tracking of progress in the critical areas of the development of sustainable human settlements
- ii. outline a data collection management strategy that will enable the measurement of the core indicators;
- iii. provide a standardized tool for the monitoring and evaluation of human settlement development interventions;
- iv. establish clear data flow channels between the different stakeholders;
- v. develop mechanisms to ensure correct dissemination of all critical information amongst stakeholders, implementing agencies, beneficiaries and the general public;
- vi. clearly describe the role of each of the stakeholders in the monitoring and evaluation of national housing programmes;
- vii. develop a plan for strengthening the capacity of all partners involved in the monitoring and evaluation of the national housing programmes.

c. Formulation of the Indicators

The M & E Framework will contain a set of indicators which were developed to enable the sector to measure the various results of thereof national housing policies, programmes and interventions. Each indicator is linked to a specific level of result, namely input, output, outcome and impact level. The indicators indicated in the M & E Framework, represents the appropriate indicators to measure the relevant levels of results in a practical, reliable, direct and adequate manner. The Indicator Protocol document contains detailed information on each indicator, namely definition, unit of measure, measurement tool, data source, baseline, target, etc.

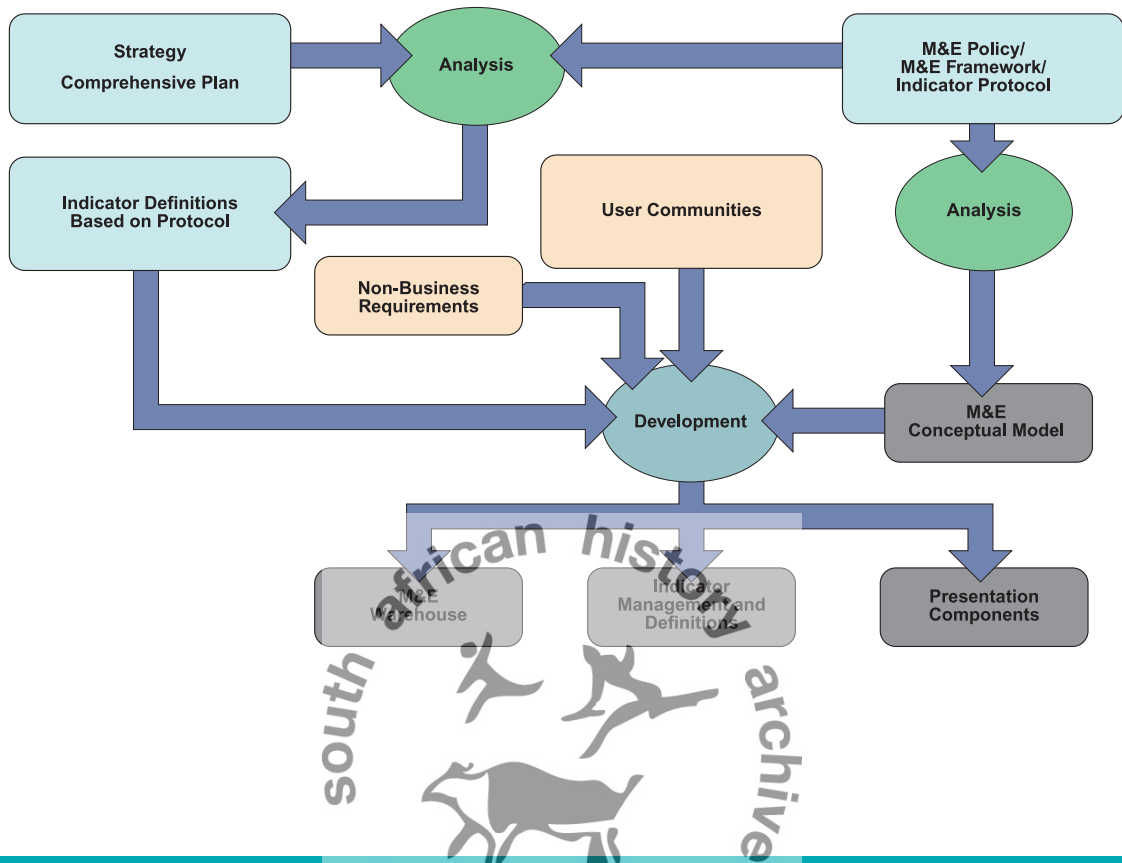
d. Achievement of the results

Results will be achieved by utilising the logic model, ie. a programme design, management and evaluation tool that describes the main elements being tested and shows how these elements work together to reach a particular goal. The elements comprise

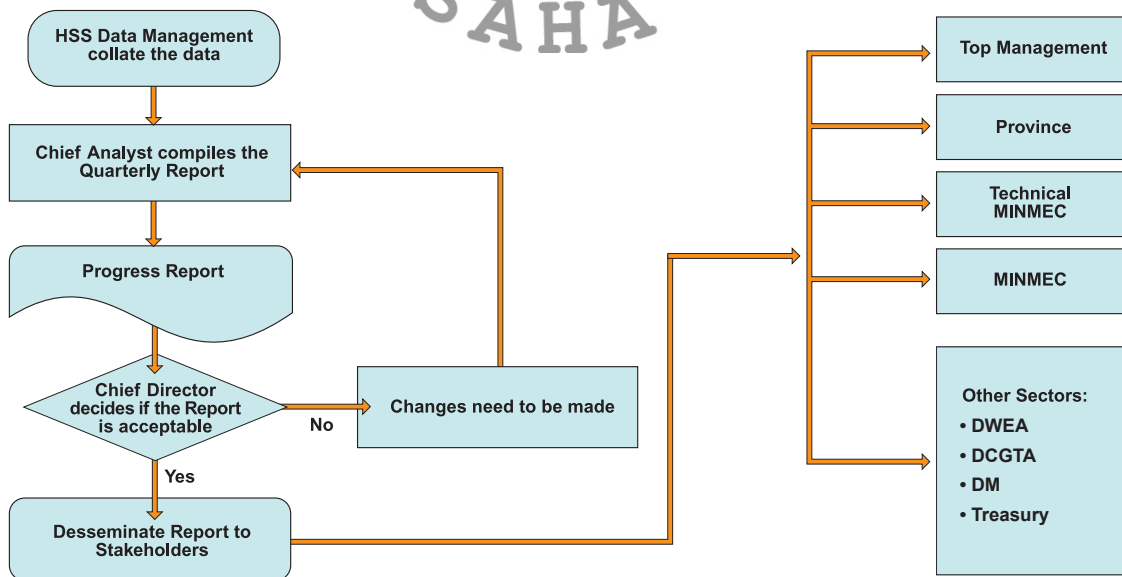
inputs, activities, outputs, outcomes and impacts and the relationship of these elements is set out logically in the Goal and Objective Map. A draft Goal and Objective Map has already been developed after intensive consultation processes with representatives from the ND and the PDs and is underpinned by the logic model.



## SUMMARY: BUILDING BLOCKS



## REPORT COMPILATION PROCESS



### 7.3.5 MONITORING AND EVALUATION SYSTEM (MEIA SYSTEM)

The application of MEIA is underpinned by an information system in terms of which the data required is accumulated in a warehouse environment, namely the Housing and Urbanisation Information Management System (HUIMS). The data required is obtained both electronically, for example the Housing Subsidy System (HSS), which is used for the administration of housing projects and subsidies, and manually from sources that are not supported by operational systems.

Under ideal circumstances, management reporting and decision support can be made directly from operational systems environments, but in practice this is not always possible because, e.g the need for the validation of data before it is formally reported and released. To allow for this, a MEIA Warehouse is to be established, within HUIMS that is consistent with the indicator definitions and the strategic objectives of the organisation. HUIMS will therefore serve as a ready dissemination channel and content management portal for the indicator reporting function as existing presentation methods (charts, tables, maps, dashboards) can be used or slightly adjusted to present indicator detail views and summaries. In addition, user registration, validation, and authentication methods already exist and can be used in its current form.

The proposed system would also be able to identify trigger points, which reflect exceptional implementation success (e.g. inputs delivered ahead of schedule, efficient service delivery or exceptional staff performance). Such information does not only provide positive reinforcement but begins to set up benchmarks for best practice.

The idea is for all stakeholders, including Provincial Departments, other National Departments such as the President's Office and National Treasury, to have direct electronic access to the MEAI System and will be able to draw updated reports from the system. The MEIA System will be maintained at the ND as part of HUIMS.

### 7.3.6 IMPLEMENTATION PLAN

As soon as the Monitoring and Evaluation Policy and Framework documents have been approved by the relevant management structures, implementation plans will be developed to cater for the implementation of the M & E Policy and Framework as well as the roll-out of the MEIA System.

### 7.3.7 CAPACITATION OF NATIONAL AND PROVINCIAL OFFICIALS

One of the critical components of the implementation process is the building of the capacity of national and provincial officials to implement the CM&ES. The capacity-building process will involve formal and structured working sessions and skills transfer as and when individual needs are identified.

To maximise effectiveness of the capacitation of both national and provincial officials, it is envisaged that training on monitoring and evaluation will be competency based and linked with work place performance. In addition, two or more levels of an organisation, for example, the senior, middle and lower management will be targeted. This will be done to ensure that managers ensure that the skills and knowledge acquired by the officials is supported and applied within the workplace.

As a part of the workforce development (formal learning), a protocol document covering the proposed indicators for MEIA was developed.

