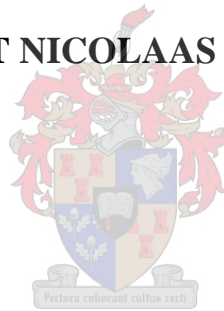


THE ROLE OF CIVIL ENGINEERING PROFESSIONALS WITHIN THE HOUSING ENVIRONMENT IN SOUTH AFRICA

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Research project presented in fulfilment of the requirement for the degree of
Masters in Civil Engineering at the University of Stellenbosch

Department of Civil and Engineering Management

Study Leader: Prof J.A. Wium

March 2012

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ABSTRACT

The development of mass housing is an excellent example of multi-disciplinary projects. Several housing projects have been unsuccessful due to a misunderstanding of the necessary collaboration and buy-in that are required from all parties concerned. The focus of this study is to identify the required skill sets and responsibilities of the Housing Project Manager in the Housing environment, and in turn, will support the development of the foundation of the civil engineering postgraduate curricula. Civil engineers are educated with a strong focus on technical subjects, but not much attention is paid to many of the less technical aspects as found in housing projects. Furthermore, the multi-disciplinary aspects of large projects do not receive sufficient attention in either the undergraduate or postgraduate curricula.

Considering that many civil engineers become actively involved as managers of housing projects, this paper will present an investigation into the requirements of the curricula of a postgraduate qualification for civil engineers towards becoming managers in housing projects. The investigation will include aspects of multi-disciplinary coordination, the less technical aspects of housing development, but will not exclude a comprehension of technical involvement.

In order to identify these skill sets and responsibilities several approaches were adopted. The approaches adopted in this dissertation include: (i) a comprehensive literature study regarding the housing environment and the position of the housing project manager, (ii) a review of several housing case studies with project management related problems, (iii) consulting with several housing management professionals from different sectors in the housing industry, and (iv) a review of existing formulations of the role and responsibilities of the housing project manager.

The findings from this study provide evidence that civil engineers operating in the housing environment as project managers require additional education, due to the multi-disciplinary nature of housing projects. The main conclusion drawn from this study is that educating civil engineers towards the management of housing projects would contribute significantly to the housing environment through increasing productivity and quality, and can contribute to meet the housing targets of the government.

OPSOMMING

Die ontwikkeling van massa behuising is 'n uitstekende voorbeeld van multidissiplinêre projekte. Verskeie behuisingsprojekte was al onsuksesvol as gevolg van 'n misverstand oor die nodige samewerking en bydraes wat vereis word van alle betrokke partye. Die fokus van hierdie studie is om die vaardighede en verantwoordelikhede van die behuisingsprojekbestuurder in die behuisingsomgewing te identifiseer. Hierdie kennis ondersteun die ontwikkeling van 'n raamwerk vir 'n nagraadse kurrikulum in behuisingsbestuur. Siviele ingenieurs is opgelei met 'n sterk fokus op tegniese vaardighede, maar relatief min aandag word geskenk aan minder tegniese aspekte soos gevind word in behuisingsprojekte. Verder, multidissiplinêre bestuursaspekte van groot projekte ontvang nie voldoende aandag in óf die voorgraadse óf nagraadse kurrikula nie.

Wetende dat baie siviele ingenieurs aktief betrokke raak as bestuurders van behuisingsprojekte, ondersoek hierdie studie 'n raamwerk vir 'n nagraadse kwalifikasie vir siviele ingenieurs as bestuurders van behuisingsprojekte. Die ondersoek sluit in aspekte van die multidissiplinêre koördinasie asook minder tegniese aspekte van behuisingsontwikkeling, maar dit sluit nie 'n begrip van die tegniese betrokkenheid uit nie.

Verskeie benaderings is toegepas om die vaardighede en verantwoordelikhede van behuisingsbestuurders te identifiseer. Die benaderings sluit in: (i) 'n omvattende literatuurstudie ten opsigte van behuising en die posisie van die behuisingsprojekbestuurder, (ii) 'n oorsig van verskeie behuisings- gevallestudies met projekbestuur verwante probleme, (iii) raadpleging met verskeie professionele rolspelers van verskillende sektore in die behuisingsbestuur omgewing, en (iv) 'n hersiening van bestaande beskrywings van die rol en verantwoordelikhede van die behuisingsprojekbestuurder.

Die bevindinge van hierdie studie verskaf bewyse dat siviele ingenieurs wat in die behuisingsbedryf as projekbestuurders optree, bykomende opleiding benodig as gevolg van die multidissiplinêre aard van projekte. Die belangrikste gevolgtrekking van hierdie studie is dat die opleiding van siviele ingenieurs in die bestuur van behuisingsprojekte 'n aansienlike bydrae kan lewer tot behuising deur produktiwiteit en kwaliteit te verhoog. Dit kan bydra tot die bereiking van die regering se behuisingsdoelwitte.

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LIST OF ACRONYMS AND ABBREVIATIONS

ANC:	African National Congress
APM:	Association for Project Management
BBE [HSD]:	Bachelor of the Built Environment in Human Settlement Development
BE:	Built Environment
BNG:	Breaking New Ground
CBO:	Community Based Organization
CIBD:	Construction Industry Development Board
CRU:	Community Residential Units
CSIR:	Council for Scientific and Industrial Research
DBSA:	Development Bank of Southern Africa
EIA:	Environmental Impact Assessment
GHS:	General Household Survey
GIS:	Geographic Information System
HM:	Housing Manager
HMP:	Housing Management Professional
HPM:	Housing Project Manager
IDP:	Integrated Development Planning
IRDP:	Integrated Residential Development Programme
LGCC:	Local Government Co-ordinating Committees
LGTA:	Local Government Transition Act
MEC:	Members of the Executive Committee
MINMEC:	Minister of the Members of the Executive Committee
MLC:	Metropolitan Local Council
NASHO:	National Association of Social Housing Organizations
NBI:	National Business Initiative
NDoH:	National Department of Housing
NEDLAC:	The National Economic Development and Labour Council
NGO:	Non-Governmental Organization
NHBRC:	National Home-Builders Registration Council
NHFC:	National Housing Finance Corporation
NMBM:	Nelson Mandela Bay Municipality

NMMU:	Nelson Mandela Metropolitan University
NURCHA:	National Urban Reconstruction and Housing Agency
OHS:	Occupational Health and Safety
PDoH:	Provincial Department of Housing
PHP:	People Housing Process
PIE:	Prevention of Illegal Eviction
PMI:	Project Management Institute
PMSA:	Project Management South Africa
RDP:	Reconstruction and Development Programme
SACPCMP:	South African Council for Project and Construction Management Professionals
SAHF	Southern African Housing Foundation
SALGA:	South African Local Government Association
Seed:	Sustainable Energy, Environment and Economic Development
SHF:	Social Housing Foundation
Shi:	Sustainable Homes Initiative
SMME:	Small, Medium and Micro-Enterprise
SPSH:	Support Programme for Social Housing
SU:	Stellenbosch University
TLC:	Traditional local councils
TMC:	traditional metropolitan councils
TMSS:	Traditional Metropolitan substructures
TUHF:	Trust for Urban Housing Finance
UNISA:	University of South Africa
USN:	Urban Sector Network

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

South Africa is one of many developing countries that have underprivileged communities without adequate housing. One of the most important things holding a family together is the house they live in. *“Many people in these neighbourhoods live in cramped overcrowded housing conditions with inadequate sanitation and poor water supply”* (Baba, 1998). Since the rural areas cannot support the number of residents, many of these residents are forced to move out of these areas to the cities where there’s a higher living standard and more employment opportunities (Aldrich & Sandhu, 1995:23). Although South Africa may be a developing country, it does have the natural resources, technology and the available land to provide communities with the necessary sustainable housing. (Leigh Burgoyne, 2008).

Financial support and much more are needed to provide communities in need with sustainable settlements. In order to manage the available resources more effectively specific management skill sets are required from housing managers. Without suitable well-organized financial support, providing for the communities in need would be difficult. *“Housing is about everything other than houses. It is about the availability of land, about access to credit, about affordability, about economic growth, about social development and about the environment.”* (South African Minister of Housing, in Leigh Burgoyne 2008:1). *“We will proceed from the understanding that human settlement is not just about building houses. It is about transforming cities and towns and building cohesive, sustainable and caring communities with closer access to work and social amenities including sports and recreation facilities.”* (Deputy Minister’s Budget Vote Speech, 2011). Houses are important not only for what it is, but is important for the value of what it provides to the people living there (Charlton, 2004:3).

Even though most governmental housing projects receive funding from the government and NGOs (Non-Governmental Organizations), proper management techniques and management skills are required from Housing Project Managers to complete the project within the designed specifications, on time and within the given budget. For any project to be

successful, the project needs the correct resources, finances and required skills. From an academic point of view, an important aspect is to focus on the roles and responsibilities of the upper and medium management team participants in order to identify the skill sets and knowledge areas required of an educated Housing Project Manager.

1.2 BACKGROUND TO THE STUDY

South Africa has been constructing low-cost houses for unprivileged communities since before the apartheid years. Providing the services to construct housing units and then handing over full ownership of these properties to the communities has only been done since 1994 (Housing Subsidies, 2011). The concept of constructing houses for low income communities for free is still relatively new in South Africa. The urgent need for provision of houses and the lack of experience in implementation of projects result in a large number of housing settlements ending up lacking access to basic services and public facilities. (Housing, 2011)

As discussed in the SAHF, the management skills to execute governmental housing projects are underdeveloped in South Africa due to the lack of experience with these types of projects (Van Wyk, 2011c). The roles and responsibilities of Housing Project Managers have not been completely defined for South Africa. It is a new focus area for professions in South Africa and has not been entirely accepted by other project management groups as a specialized profession (Van Wyk, 2011). *“Sustainable development introduces the concept of needs, the specific basic needs of the world’s poor, to which main priority should be given.”* (Van der Waldt, Venter, Van der Walt, Phutiagae, Khalo, Van Niekerk & Nealer, 2007)

It is important that these difficulties in delivery of housing projects be considered a high priority to be addressed in South Africa. If this issue can be resolved and the role of a Housing Project Manager is established as a well-recognized profession, then this could lead to more successful housing projects, thereby reducing the housing shortage in South Africa.

1.3 FOCUS OF THE STUDY

When referring to the Housing Project Manager within this study it is referring to the civil engineering professional in the role as project manager (operating as part of the professional team – chapter 4.3) within the housing environment.

The focus of this study is to identify the roles and responsibilities of the Housing Project Manager of governmental housing projects. By identifying the individual skill sets and knowledge areas required for Housing Project Managers this would contribute to the establishment of a framework for a civil engineering postgraduate curriculum to educate civil engineers towards housing management. A Housing Project Manager, with a civil engineering background, should be able to provide the community with sustainable settlements by successfully managing all the phases of the project especially the implementation phases. The main objective of the Housing Project Manager within the implementation phase of the project is to construct the houses and the necessary infrastructure, while interacting with several other departments (legal, policy and strategy, etc...) in order to complete the project successfully.

It will be shown in this thesis that the Housing Project Manager plays a role in both the planning and implementation phases, and that his technical knowledge is of great value during the planning phase.

Managing housing projects is considerably different from managing other projects, as there are a variety of social and technical aspects to take into consideration (Bekker, 2011). Most large human settlement development projects are similar to developing a small town or suburbs. There are several different aspects that need to be taken into consideration when developing a new sustainable settlement environment, e.g. road design, health facilities, water and electricity, etc. Managing the construction of the housing units is similar to other non-governmental projects, but the interaction with all these other different departments and the need for their input, affect the responsibilities of the Housing Project Manager differently from any other project manager's role.

The aim of this study is to propose the framework for a postgraduate curriculum for civil engineers to be educated in housing management. In order to establish this, the need for adequate Housing Project Managers in the housing industry needs to be identified, as well as the roles and responsibilities of the Housing Project Manager within the implementation of the housing units.

The location of the Housing Project Manager within the housing industry is shown in Figure 1.

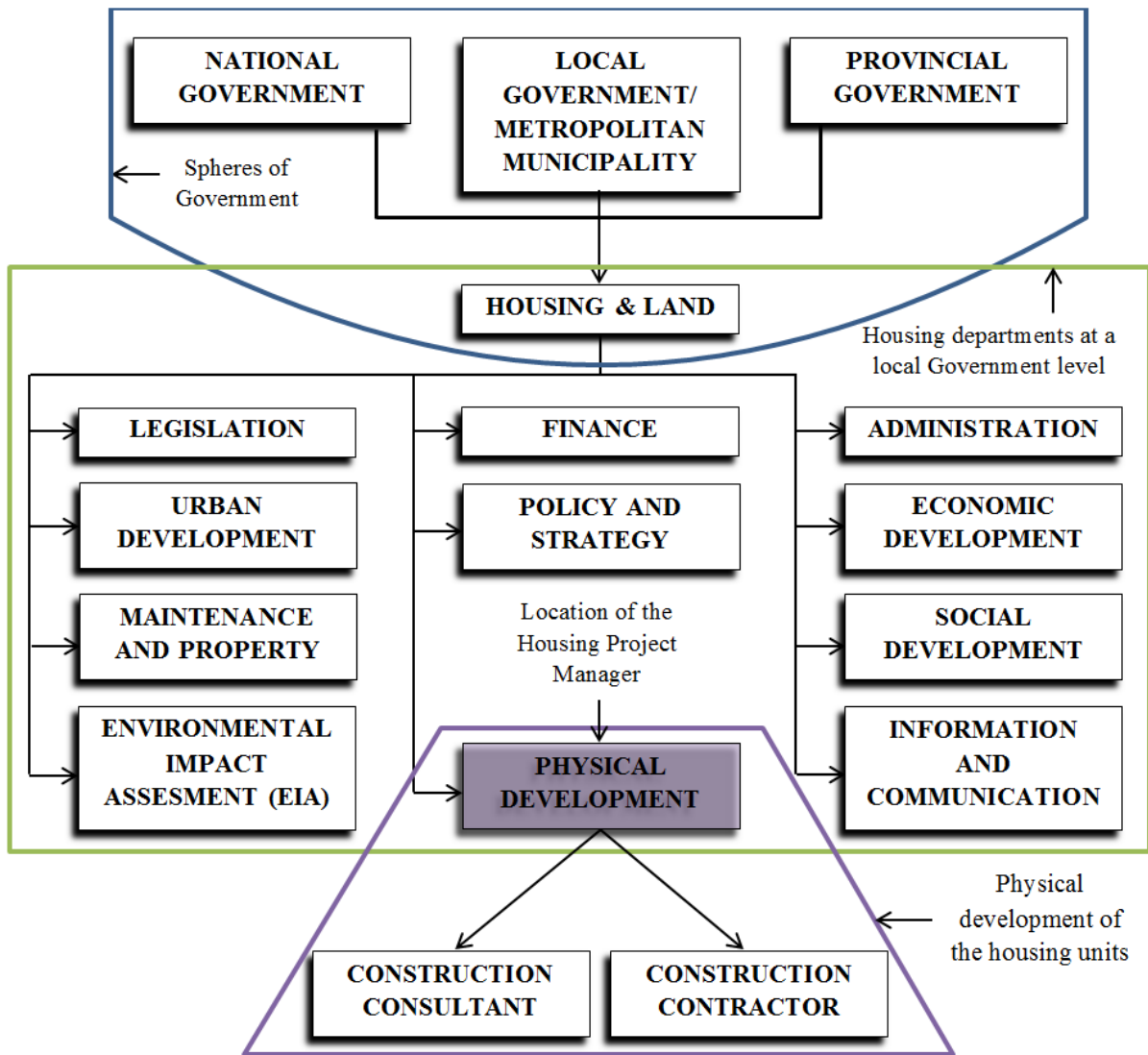


Figure 1: Focus of the Study – Location of the Housing Project Manager

1.4 THE AIM AND OBJECTIVES

The aim of the study will be achieved through interim objectives. Clarifying the objectives would define and simplify the aim of the study.

1.4.1 OBJECTIVES

The objective of the study is to identify the role and responsibilities of the housing project manager. This objective is achieved:

- Firstly through a comprehensive literature study regarding the housing environment and the position of the housing project manager.
- Secondly, through a review of several housing case studies with project management related problems. These problems could have been prevented if a suitable set of housing management skills and knowledge had been present.
- Thirdly through consulting with several HMPs (Housing Management Professionals) located in different sectors in the housing industry (private sector, public sector and municipality). By consulting with role players in the housing industry on the subject of the roles and responsibilities required for the Housing Project Manager it would provide some empirical insight into the aim of the study.
- Fourthly, through a review of existing formulations of the role and responsibilities of the Housing Project Manager.

1.4.2 AIM

The aim of this study is to propose the framework for a postgraduate curriculum for the department of civil engineering at SU (Stellenbosch University) to educate civil engineers as Housing Project Manager. By incorporating the identified findings of the objectives into the postgraduate curriculum, effective courses can be compiled for this curriculum. Educating civil engineers towards housing management would reduce the problems in the housing industry for South Africa.

1.5 METHODOLOGY

In order to identify the key focus and to solve the problems, a structured methodology is required. The following procedure was followed in this study:

The first step was to study literature regarding governmental low-cost housing projects in South Africa over the past 17 years. In addition, to study literature regarding the roles and responsibilities, knowledge areas and attributes of the specific Housing Project Manager and his interaction with the different management departments.

Subsequently, several Housing Project Managers in the construction industry were interviewed with a set of standard questions to obtain their views and insights regarding the aim and objectives of the study. The different departments that were interviewed focus on different roles within housing management and have different responsibilities within the implementation phases of the housing projects.

The next step was to study several relevant case studies regarding the governmental low-cost housing projects, and those specific case studies that contain most of the problems identified in the questionnaires. Several case studies were used to capture the specific objectives and aim of the study.

Once the skills of the Housing Project Managers had been identified, only then was it possible to propose the postgraduate housing management curriculum which can be used to educate civil engineers towards Housing Project Manager for future housing projects.

Figure 2 offers a structured diagram of the methodology. The chapter numbers are also provided on the diagram.

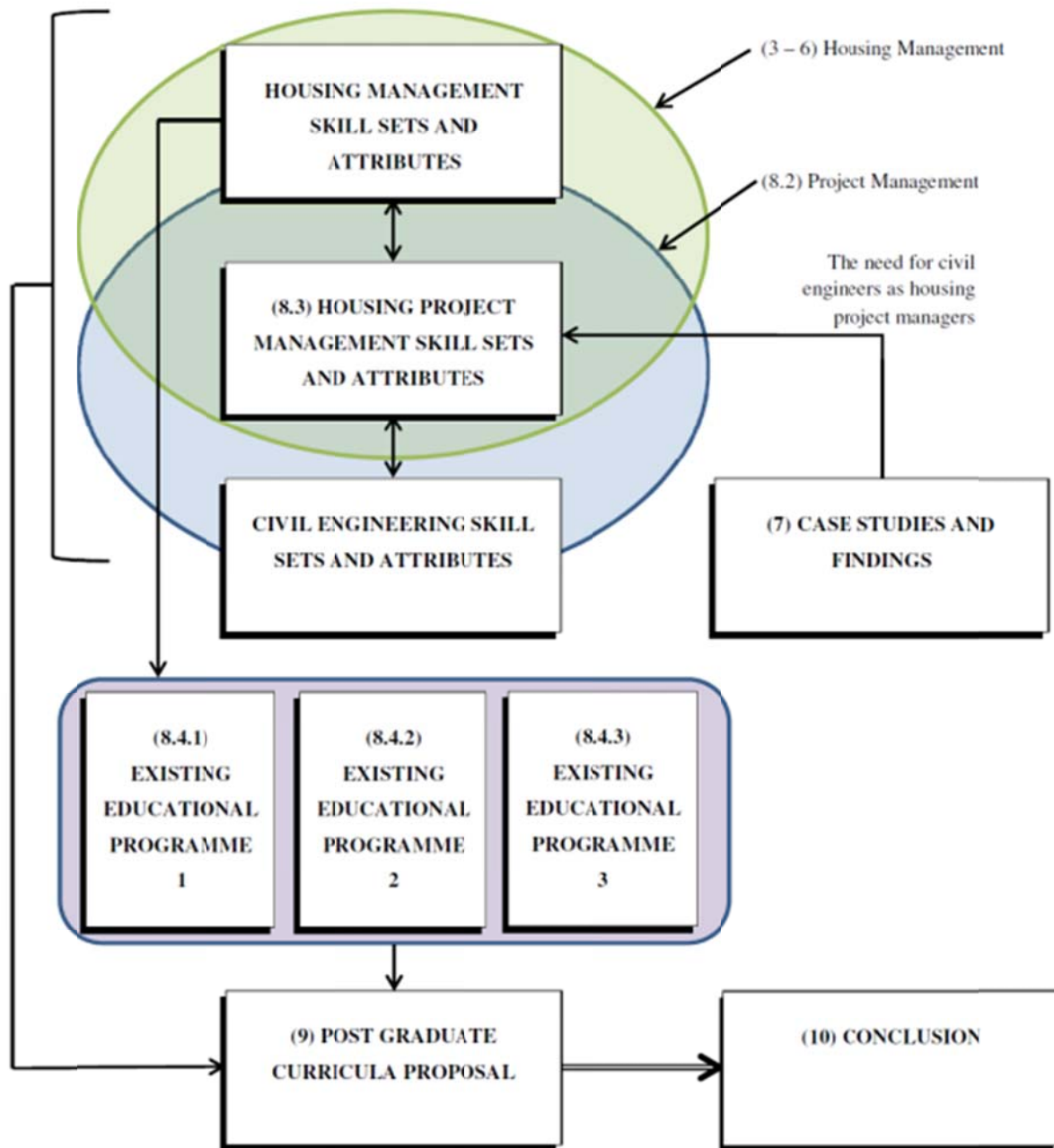


Figure 2: Methodology of the Study

1.6 OVERVIEW OF THE STUDY

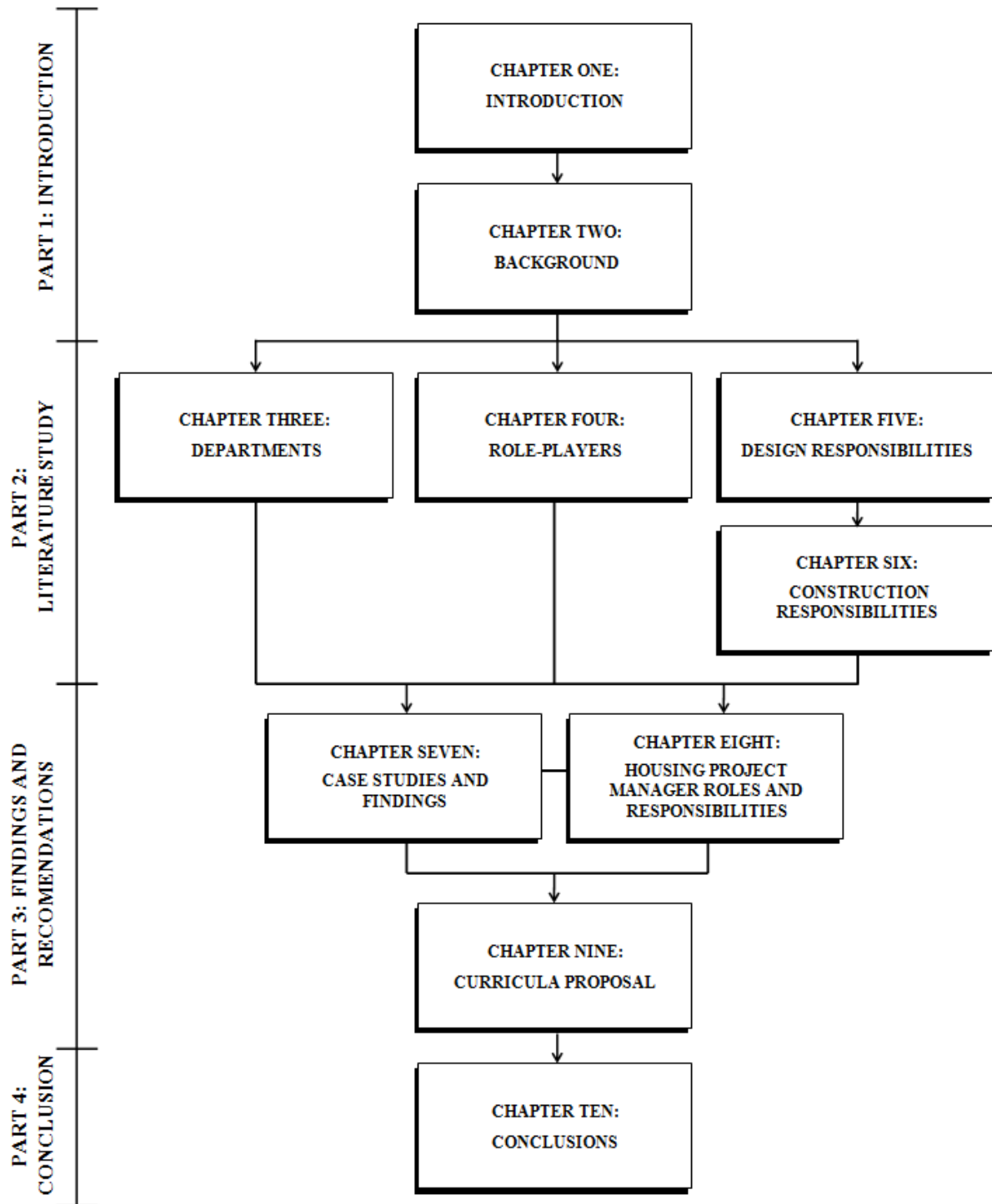


Figure 3: Overview of the Study

An overview of the study is provided in the following paragraphs. Reference is made to the flow diagram in Figure 3.

1.6.1 CHAPTER TWO: LOW-COST HOUSING DEVELOPMENT IN SOUTH AFRICA

Chapter two is the background chapter, discussing the housing development situation in developing countries and in South Africa. The history of low-cost housing in the world's developing countries and specifically in South Africa is discussed. The chapter provides all the relative statistics and figures of the current situation in South Africa to identify the importance and need for human settlement improvements. The focus of this chapter is to explain the background of this study, to present the impact of housing and the reason why housing is such an important part of the future for any developing country. The chapter then provides the background why housing management as a profession needs to be identified and well defined as an important profession for South Africa.

1.6.2 CHAPTER THREE: THE ROLE PLAYERS AND RESPONSIBILITIES IN HOUSING MANAGEMENT DEPARTMENTS

The main focus of chapter three is the roles and responsibilities of the different municipal and government departments involved in housing within the implementation phases of housing projects. The chapter consists of several important sub-chapters, namely (i) housing management within the three spheres of government; (ii) the departments involved in housing management; (iii) the departments involved in the implementation phases of housing projects.

- *The three spheres of government:* The roles and the responsibilities of the national government, provincial government and the local government are defined and discussed as related to the implementation phase of housing development.
- *The departments involved in housing management:* There are different departments that need to be taken into consideration when identifying the roles and the responsibilities of the Housing Project Manager. Several of the 'housing & land' sub departments play an important role in the implementation phase of any housing project. These sub departments need to communicate continuously throughout the

entire project, and communicate with the other external role players involved in the implementation phases.

- *The players involved in the implementation phases of housing projects:* There are different role players involved in the construction phases of the housing units. The two main role players are the construction consultant and construction contractor. Identifying the responsibilities of each of these role players helps to define the management roles within the implementation phase of the housing development project.

1.6.3 CHAPTER FOUR: THE HOUSING MANAGEMENT ROLE-PLAYERS INVOLVED IN THE IMPLEMENTATION PHASES

The main focus of chapter four is the roles and responsibilities of the different role-players involved in housing within the implementation phases of housing projects. The chapter contains two important sub-chapters, firstly the roles of HMPs (Housing Management Professionals) and secondly the professional role-players within the implementation phases of the housing projects (within the Built Environment of the project).

- *The roles of HMPs (Housing Management Professionals):* There are several HMP (Housing Management Professional) roles for managing housing projects, ranging from the phase in which the need for housing is identified, to the handover phase of the houses. There are also several of these HMPs that are required throughout the entire project. The Housing Project Manager is one of the HMPs and has to communicate with the rest of the management team and other HMPs. The Housing Project Manager needs to understand the roles and responsibilities of other HMPs in order to succeed in the implementation phase of the project and for the project to reach completion successfully.
- *The professional role-players within the implementation phases of the housing projects:* A discussion with respect to the roles and responsibilities of the Housing Project Manager within the implementation phases of the housing projects. These professional role players are referred to as the professional team of the built environment.

Only once all the other management role players have been defined can the roles and responsibilities of the Housing Project Manager be expressed more clearly.

1.6.4 CHAPTER FIVE: INTEGRATED DEVELOPMENT PLANNING (IDP), DESIGN AND SERVICE RESPONSIBILITIES FOR HOUSING PROJECTS

Chapter five provides a full discussion regarding Integrated Development Planning (IDP) and housing integrated into the IDP. This chapter also identifies most of the different design and service responsibilities required within the implementation teams as well as the service responsibilities of the local government after the handover of the houses.

There are several other aspects to take into consideration when designing sustainable human settlements, for example the road designs, the fresh and storm water design, sewerage, transport systems as well as public facilities, etc. These services are included in the responsibilities of the Housing Project Manager. The implementation phase of the project consists of more than just the construction of the housing units. Once the project is completed and handed over to the client, the maintenance and further construction need to be taken into consideration. It is important to keep the new settlement sustainable through maintenance, as well as to monitor of the population growth for further construction in the area.

1.6.5 CHAPTER SIX: THE IMPLEMENTATION PHASE OF HOUSING PROJECTS

Chapter six identifies three housing programmes that are used in South Africa. The following two housing guides contain the implementation processes of these three housing programmes. The current housing development guides are the ‘Housing Project Process Guide’ that was published in September 2009, and the “community residential unit delivery chain guide” that was published in 2008. The focus is mainly on the implementation process of these three housing programmes.

Once all the management aspects outside the technical aspects of the Housing Project Manager have been discussed, the technical responsibilities of the manager can be addressed.

1.6.6 CHAPTER SEVEN: CASE STUDIES AND FINDINGS REGARDING ROLES AND RESPONSIBILITIES OF THE HOUSING PROJECT MANAGER

Chapter seven consists of three approaches to identify practical findings. These three approaches are: (i) Reviewing several South African housing development case studies, (ii) Interviewing professionals within the housing industry, and (iii) Housing management requirements identified through studies by others.

The practical information from over the past two centuries regarding housing development in South Africa is discussed in chapter 7. This chapter would help to provide a practical understanding of this study.

1.6.7 CHAPTER EIGHT: THE SKILL SET REQUIREMENTS OF A HOUSING PROJECT MANAGER

Chapter eight includes a number of topics, namely, (i) the skills required by a project manager, (ii) the additional skills required by the Housing Project Manager, (iii) current housing management educational programmes available.

- *The project management skills:* The skills required to be a successful project manager within the construction industry.
- *The housing project management skills:* The skills required by a Housing Project Manager to be a successful manager mainly in the design phases and the construction phases of the housing projects.
- *Housing management educational programmes in South Africa:* Three housing management educational programmes available in South Africa and their courses are discussed in this section.

Chapter seven provides a synthesis of the results obtained in the relationship between the case studies and findings (chapter six), and the literature background (chapters three to five). The expected outcomes of the proposed curriculum are also discussed in this chapter.

1.6.8 CHAPTER NINE: PROPOSAL FOR THE POSTGRADUATE CURRICULUM FRAMEWORK

Chapter nine provides the proposal for a new postgraduate educational curriculum to educate civil engineers towards housing project management. After analysing the information in chapter 7 and chapter 8, a better understanding is provided of what is expected of a civil engineer operating in the housing industry.

To become an effective Housing Project Manager, there are a number of skills that can only be developed through working in the construction industry for several years. There are also management skills that require practical experience but which can be taught through a combination of short courses. A set of postgraduate short courses are proposed to assist civil engineers in gaining the skills required to be a successful Civil Engineering Professional as Housing Project Manager within the Housing Environment.

This postgraduate curriculum would provide additional support to assist a civil engineer in achieving his goal of becoming a successful Housing Project Manager.

1.6.9 CHAPTER TEN: CONCLUSIONS

Chapter ten provides the conclusion and recommendations with respect to this study.

CHAPTER TWO

LOW-COST HOUSING DEVELOPMENT IN SOUTH AFRICA

2.1 INTRODUCTION

This chapter focuses on the concept of governmental housing projects to provide a better understanding of the roles and responsibilities of the different departments involved in housing projects for unprivileged communities. A short discussion of the history of housing development in South Africa is given. This chapter also provides a better understanding of the current housing situation and the future visions for housing projects in South Africa. The diagram given in Figure 4 shows the flow of this chapter.

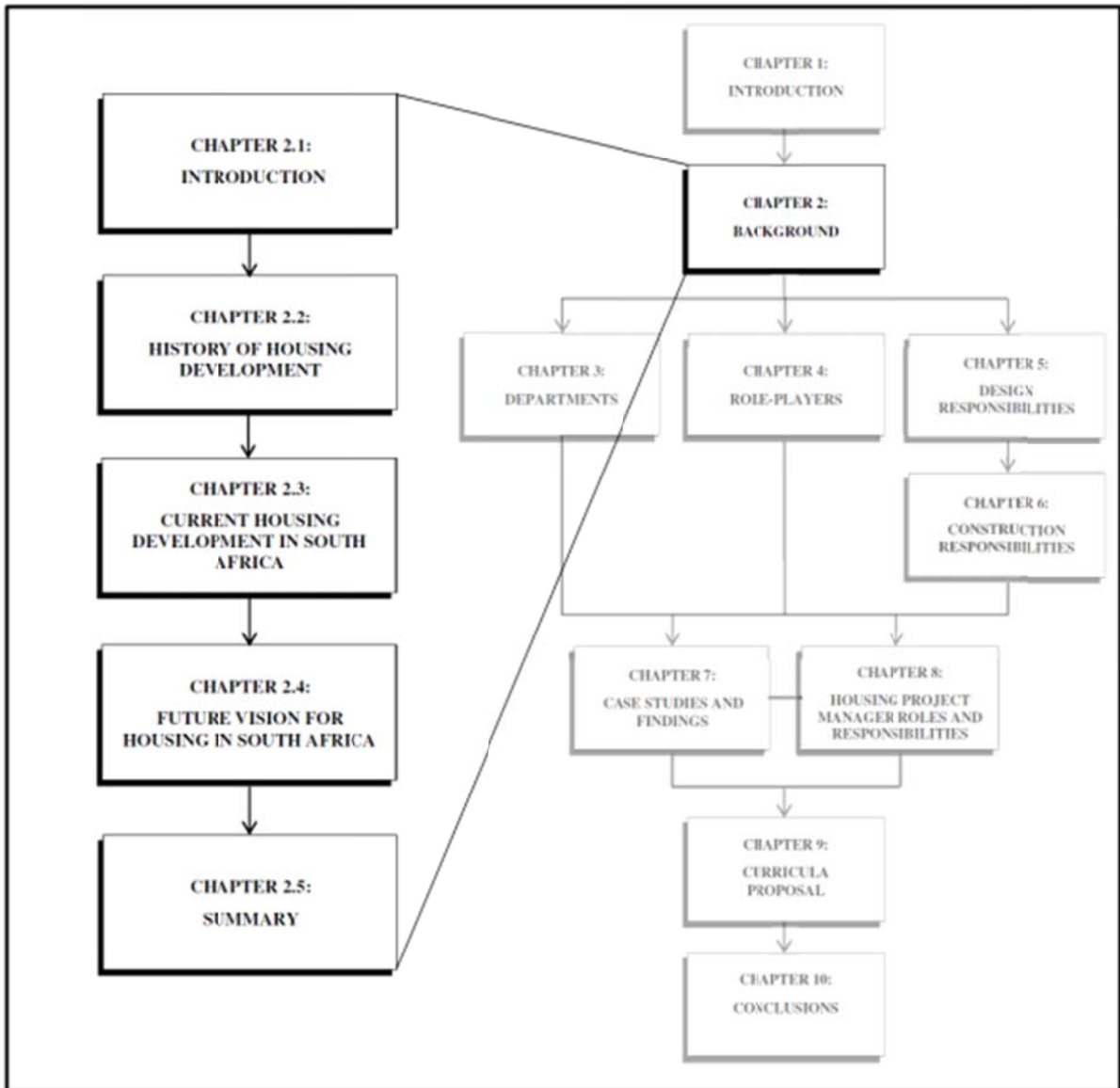


Figure 4: Overview of Chapter 2

2.1.1 DEFINITIONS OF HOUSING

The definitions of housing projects are described in this section. The Department of Human Settlements has several programmes to help unprivileged communities that cannot afford any form of accommodation in the housing market. There are three types of Social and Rental Housing Programmes. (Description of the current National Housing Programmes per Intervention Category, 2011)

Community Residential Units (CRU) – This programme facilitates the provision of secure and stable rental tenure for the lowest income persons who are not able to be accommodated in the formal private rental and social housing market. It also provides a framework for dealing with the many different forms of existing public sector residential accommodation, including hostels, redevelopment projects.

Social Housing – The Social Housing programme aims to provide a rental or co-operative housing option for low income persons who require a formal housing unit. This should be provided by accredited social housing institutions and in designated restructuring zones.

Institutional Housing– This mechanism is targeted at housing institutions that provide tenure arrangements alternative to immediate ownership (such as rental, instalment sale, share block or co-operative tenure) to subsidy beneficiaries.

Both the Community Residential Units (CRU) and Social Housing are part of the national rental strategy that targets the lower income owners and provides accommodation at a decent rental cost. The differences between CRU and Social Housing are in Table 1.

Table 1: Difference between CRU and Social Housing (Community Residential Unit – Implementation Delivery Chain, 2008)

Community Residential Units	Social Housing
CRU is focused on income bracket of R800 – R3500 per month.	Social housing focuses on a household income bracket of R1500 – R7500 per month and requires private sector (profit and non-profit) involvement in the management and funding of projects.
CRU tries to bridge the gap between the services offered by social housing and tries to make rental housing accessible to the lower income market.	Social housing has a restricting objective, i.e. integrated, non-racial societies.
CRU targets housing stock which is owned by the public sector, particularly medium density buildings that are in disrepair, e.g. hotels, abandoned buildings and public housing.	For social housing projects to be implemented the appropriate land will need to be acquired and the site will need to be zoned for social housing development, prior to development.
CRU provides a once off subsidy for the full capital costs of the project, a once off maintenance subsidy after five years and a facilitation cost. By covering the full capital costs CRU makes rental housing more affordable.	The funding provided by social housing from the NDoH (National Department of Housing) is for a significant portion of the capital costs and delivery agents can access an institutional grant.

All three housing programmes are government funded projects, for every human has the right to proper accommodation. No person should be without shelter and if they do not have, they must be provided for, since shelter is a human right (Constitution of the Republic of South Africa Act 108 of 1996, Section 26). “But you can't have a situation in which half the population just simply says: *Here we are, it is your responsibility to give us houses; it is your*

responsibility to furnish those houses ... to feed us ... and to ensure that our children get their education free", Deputy President Kgalema Motlanthe said in a recent interview in the Sunday Times (Housing, 2011).

The overall goal and vision of all the different programmes implemented is to provide houses for communities. *"Housing the Nation is one of the greatest challenges facing the government of National Unity. The extent of the challenge derives not only from the enormous size of the housing backlog and the desperation and impatience of the homeless, but stems also from the extremely complicated bureaucratic, administrative, financial and institutional framework inherited from the previous government."* (White Paper on Housing, 1994)

2.1.2 SUSTAINABLE HOUSING DEVELOPMENT

There are several components to consider when developing a sustainable human settlement area. The 3rd European Ministers Conference on Sustainable Housing identified the following aspects as a definition of sustainable housing. (Sustainable Housing Policies in Europe, 2002)

- **Sustainability - a construction perspective**

Two main elements are considered when focusing on the quality of construction:

- 1) Lifespan – depends on the quality of the building materials;
- 2) Adaptability – considering the occupational uses of the accommodation and the changing needs of the occupant in the accommodation.

- **Sustainability - a social and economic perspective**

The referred characteristic of accommodation for the occupier:

- 1) Affordability – should support the financial means of the occupiers, so that occupiers could maintain without having to neglect their essential needs (balanced diet, health, education, culture, etc.);
- 2) The indirect costs – the travel costs that are linked to the location of the new developed settlement;

- 3) The impacts of the residential environment (the location of the housing settlement) on the physical and mental health of the occupiers;
- 4) Psychological and social functions – moving from a "place to live" to "home"; encouraging the development of social networks and social solidarity.

- **Sustainability - an eco-efficiency perspective**

The aspects of limiting resources and at the same time increasing the well-being of the occupiers are listed below:

- 1) The rational and efficient use of natural non-renewable resources – in construction and accommodation phases:
 - energy: level of energy consumption;
 - construction materials;
 - space: the use of land, efficient management should aim to limit the use of land including housing;
- 2) "Disconnecting" – on the one hand an increase in comfort and on the other hand consumption of resources. This is best described by the phrase “do more with less”.

Van Wyk (2009:368) identified the six components of sustainable housing development. These are (i) Social, (ii) Political, (iii) Economic, (iv) Natural / Ecologic, (v) Technology, and (vi) Cultural. When all these components overlap within the dimensions of the housing context, sustainable housing development is created as seen in Figure 5. Sustainable development should be enforced on all levels of authority especially at the local authority, in order to create sustainable human settlements.

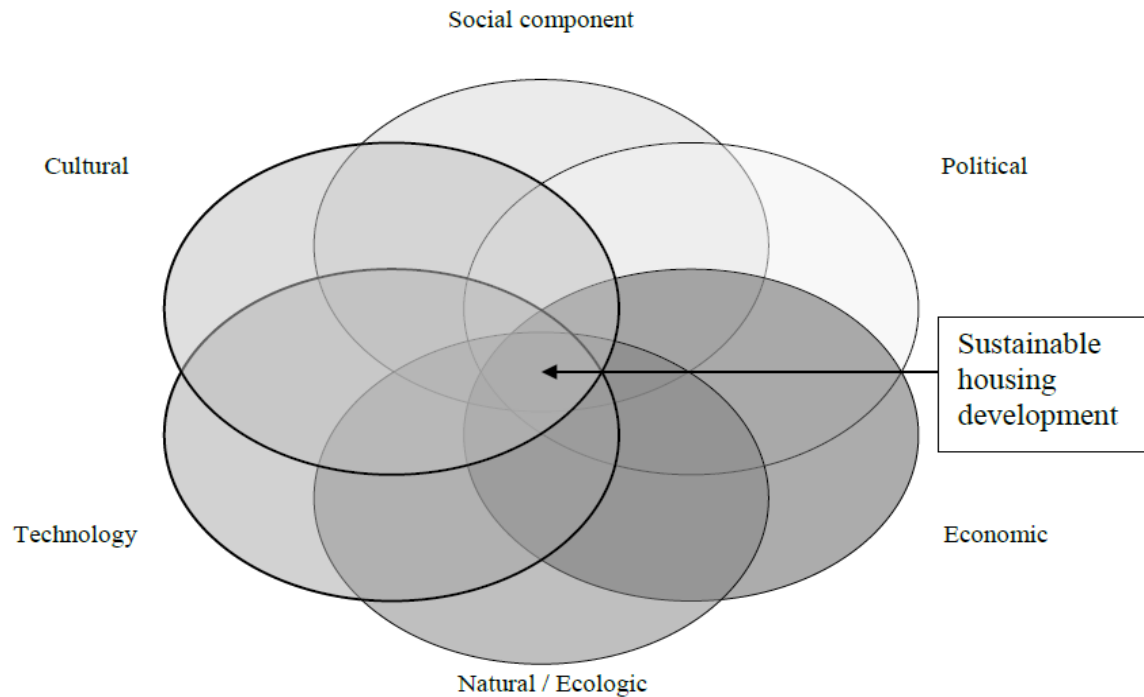


Figure 5: Components of a Sustainable Development Housing context (Van Wyk, 2009:386)

Table 2 and Table 3 provide a better insight regarding sustainable housing development.

Table 2 shows some details of the different components of sustainable housing development. These six components together create a sustainable environment for human settlements.

There are several different levels or layers of authority where sustainable housing development needs to be enforced. Table 3 shows some detail of the layers of housing, from global to the specific individual role of management. The scope of management decreases from left to right in Table 3.

Table 2: Some detail of the dimensions of the housing context (Van Wyk, 2009:388)

Social	Cultural	Economical	Political	Technological	Natural/Ecology
Demographics Age distribution Social association Ethnic grouping Class distinction Social activities Household make-up Land and layout	History Religion Language Values Norms & traditions Housing and house type preferences Legends and symbols Traditional tenure systems	Wealth of government and household Employment rate Levels of poverty Income distribution Equity Interest rates Cost of capital Government budget for housing and infrastructure Subsidy level and scope	Ideology, Policy, Legislation, Democracy Regional boundaries Decentralization of power and decision-making Community structures and involvement Stability, security, equity public services provision and access to housing as a human right	Material House designs Density Types of services Alternative technologies Communication and information technologies	Topography Land availability Suitability of land for housing and infrastructure Soil types Climate Vegetation Natural animal life Water availability and usability Arable land Alternative land uses

Table 3: Some details of the layers in the housing context (Van Wyk, 2009:388)

Global	Developing Countries	National	Provincial	Local	Organizational	Professional	HMP (Housing Management Professionals)
Global challenges of adequate housing for the poor. Improve the lives of 100 million slum dwellers by 2020	Unique characteristics, e.g. Poverty High unemployment Housing guidelines e.g. Habitat Agenda Agenda 21 WSSD Declaration	Housing Act and related legislation Housing Code Social housing Policy Other related policies	Provincial Housing Board Provincial housing policy Related policies Legislation	Municipal Housing Policy Integrated development plans Building and town planning regulations Other related regulations and bylaws	Organizational vision, mission, goals, objectives and critical performance areas	Built Environment Professionals Planning professionals Other professionals such as Social workers Professional bodies	Council for Housing Professionals

2.2 THE HISTORY OF HOUSING DEVELOPMENT

2.2.1 INTERNATIONAL HISTORY OF HOUSING DEVELOPMENT

This section provides an insight into the history of housing development internationally.

Social housing first started in Europe over 100 years ago, but after the two World Wars the development and reconstruction dramatically increased because of the housing needs in the post-war period. But housing was a problem for developing countries even before the two World Wars. The word “slum” first appeared in the 1820’s and was used to identify the most unsanitary conditions and poorest quality housing areas (Nairobi, 2007).

A slum is an area that combines the following features:

- Inadequate access to safe water;
- Inadequate access to sanitation and other infrastructure;
- Poor structural quality of housing;
- Overcrowding; and
- Insecure residential status.

But in the past, in the case of developing countries, the word “slum” lacked the full meaning, and simply referred to lower quality or informal housing settlements. These characteristics can be used to measure progress toward the Millennium Development Goal to considerably improve the lives of 100 million slum dwellers by 2020 (Nairobi, 2007).

Housing development has been around for a while now and has not been properly managed, but according to Riggs (in Esman, 1991:15), housing development management originated in the 1950’s from public administration and the focus was on the higher-level roles of senior public officials: taking and making decisions, shaping policy and over-viewing the implementation of non-routine government activities, such as the encouragement of social and economic development.

The most commonly known social housing ownership is described below:

- Housing co-operatives: “What this means, is that members neither own nor rent their individual property, but rather own all the property together, with each member having exclusive rights to use the particular unit in which they live.” (History of Social Housing: Internationally and in South Africa, 2009). This method is found in South Africa but not to such an extent as in the United States, France, Canada and other Southern African countries such as Zimbabwe and Kenya.
- Not-for-profit housing associations are found all over the world and are the most commonly known form of social housing delivery. “Housing associations can be defined broadly as not-for-profit organizations which are established for the purpose of providing, constructing, improving, or managing housing.” (History of Social Housing: Internationally and in South Africa, 2009).
- In general the municipal or state owned accommodation is still the larger sector in many countries. “It comprises rental accommodation that is developed, owned and managed by a government entity for use by low income households at a reduced rental.” (History of Social Housing: Internationally and in South Africa, 2009).

An important aspect of social housing is that the government provides substantial financial support for these projects. “Governments have generally provided substantial capital subsidies to cover the costs of developing acceptable quality units, funds to cover running costs on an annual basis to ensure that rents are affordable to the target population, land at reduced costs, and tax incentives to registered Social Housing Institutions.” (History of Social Housing: Internationally and in South Africa, 2009)

Jain (1992:96) states that the shortage of housing and buildings (the basic components of human settlements) is a matter of increasing unrest and concern. The significance of this problem is pointed out by the key position of construction within the national economy. This is the second largest sector just after agriculture. “Building and supporting activities account for about one half of the total value of investments and represent approximately 10% of the gross national product in any country.” (Jain, 1992). Consulting with Van Wyk (2011) it is acknowledged that housing is one of the major sectors of development.

The formation of informal settlement is connected to the economic cycles, trends in national income distribution, and more recently to the national economic development policies. “The

Report finds that the cyclical nature of capitalism, increased demand for skilled versus unskilled labour, and the negative effects of globalisation – in particular, global economic booms and busts that ratchet up inequality and distribute new wealth unevenly – contribute to the enormous growth of slums.” (Nairobi, 2007). “Rapid urbanization continues to be major challenge in developing countries. More than 70% of the world population will be living in cities by 2050.” (Deputy Minister’s Budget Vote Speech, 2011).

2.2.2 THE HISTORY OF HOUSING DEVELOPMENT IN SOUTH AFRICA

PRE 1994

This section starts right at the beginning of housing development in South Africa. (Housing finance system in South Africa, 2008)

(1920) – The Housing Act (No 35 of 1920): This Act was introduced so that a Central Housing Board could oversee the governmental funds to the local authority, and to control the construction of houses for black people (pre 1994 the term ‘black’ referred to all the non-white groups).

(1923 - 1929) – The native (urban areas) Act of 1923: The legislation identifies three forms of accommodation: hostels, locations and native villages. The level of housing delivery fell short of the country’s needs and the local authority assumed greater responsibility.

(1929 - 1948) – Industrial development, urbanization: During this time the population in the urban areas increased and sub-economic loans were made to the local authority for non-white housing to clear the slums.

(1948 - 1960) – The nationalist government & separate development: *“The Group Areas Act of 1950 provided for stricter implementation of the policy of segregation of residential areas. Large-scale resettlement of Blacks, Coloureds and Indians under the Group Areas Act commenced. In 1947, the four roomed, 51/6 prototype was developed and constructed at large scale in all black townships.”* (Housing finance system in South Africa, 2008)

(1950-1960) – National Building Research Institute (NBRI): Large investments were required for the implementation of the housing projects in the 1950’s. The National Building

Research Institute (NBRI) drew up national standards for government funded housing while minimising the cost. (Haarhoff, 2011)

(1960 - 1975) – Increased segregation & tighter influx control: The influx tightened by further restricting black people from moving into white areas, and housing permits were only allocated to males over the age of 21.

(1975 - 1977) – Leasehold right, widespread rioting and housing shortage: A serious housing shortage was displayed in this period. The introduction of the leasehold rights for black people and detailed home ownership (30-year lease) schemes were given to black people.

(1977 – 1980) – Legislative and policy changes and protests over rent increases: *“The introduction of a 99 year leasehold scheme in April 1978 through the Blacks (Urban Areas) Consolidation Amendment Act No. 97 of 1978 which made private sector finance available provided access to building society loans and enabled employers to assist black people in acquiring their own homes.”* (Housing finance system in South Africa, 2008).

(1980 – 1994) – Private sector development and increased political strife: During the 80’s the housing delivery aimed at black middle income families. *“Self-help housing emerged as a form of housing delivery which focused on owner builders and starter and incremental housing. The removal of influx control saw the rise of informal settlements and projects emerged which focused on upgrading (e.g. site and service) rather than removal.”* (Housing finance system in South Africa, 2008).

POST APARTHEID 1994

The concept and practice of low-cost housing development projects is relatively new for South Africa compared to the rest of the world. South Africa has been constructing houses for its citizens since before 1994, but for the past seventeen years the concept of housing delivery in South Africa has changed significantly. *“It is therefore useful to reflect on the experiences and lessons learnt about social housing internationally and then in South Africa.”* (History of Social Housing: Internationally and in South Africa, 2009)

Since 1994 the government started the Reconstruction and Development Programme (RDP) which focused on the basic needs of South Africans. These needs amongst other things are

constructing houses, water and sanitation and creating job opportunities. One enormous problem was not knowing at the time, “*how many households suffered from services backlogs; what household incomes were and what levels of services they might afford; whether local government had the capacity to deliver these services as well as how the capital and operating costs were to be financed*” (Leigh Burgoyne, 2008). The vision of the RDP: housing had two significant roles, to accelerate development and directing government spending.

The government hoped to reach the poorest areas and fulfil the target of constructing a million houses in five years (first term of office). An estimated 1,167,435 units were delivered and provided homes for more than 5 million people, exceeding the target for its first term in office, as shown in Table 4. The amount of RDP houses provided per province is shown in Table 4.

Table 4: RDP units completed per province (Department of housing, 2001, cited in Leigh Burgoyne, 2008:38)

Province	Houses Completed / Under construction	Delivery as % of total backlog (per province)	% delivery of the 1 million houses
Eastern Cape	98,774	13.8	65.0
Free State	91,699	35.1	132.9
Gauteng	348,288	51.9	143.3
Kwazulu – Natal	206,670	24.3	106.0
Mpumalanga	68,860	35.9	129.9
Northern Cape	30,437	183.3	169.1
Limpopo	83,147	15.6	96.7
Northern West	91,184	26.9	130.3
Western Cape	148,376	91.4	130.2
TOTAL	1,167,435	31.2	116.7

Charlton (2004:3) notes that the housing programmes available in South Africa are widely acknowledged and have led to the completion of more housing units than that of any other country in the world.

The new direction for housing policy is the Breaking New Ground (BNG) strategy which was introduced at the end of 2004 and is aimed at directing housing for the next five years. This strategy is required to “*redirect and enhance existing mechanisms to move towards more responsive and effective delivery*” and strives to “*promote the achievement of a non-racial, integrated society through the development of sustainable housing settlements and quality housing*” (Department of Local Government and Housing, 2005:8).

The complete housing plan was approved for the Department of Integrated Human Settlements (Breaking New Ground [BNG]). The aim of the strategy is to eliminate informal settlements in South Africa in the shortest possible time.

The BNG includes principles such as the:

- “integration of subsidised, rental and bonded housing
- provision of engineering services at a higher level than many other townships, and applied consistently throughout the township
- provision of ancillary facilities such as schools, clinics and commercial opportunities
- combination of different housing densities and types, ranging from single stand units to double storey units and row houses” (Housing, 2010).

The key initiatives of housing in South Africa since 1994 are listed below (History of Social Housing: Internationally and in South Africa, 2009):

(1994) - The Housing Subsidy Scheme implemented: The subsidy was implemented on 15 March 1994, and allowed households with an earning of up to R3500 per month support to acquire secure tenure, a top structure and basic services. The subsidies are discussed in chapter 3.2.3 below and comprise:

- The Individual Subsidy
- The Project Linked Subsidy

- The Consolidation Subsidy
- The Institutional Subsidy
- The Relocation Assistance Subsidy
- The Rural Subsidy

The Housing Subsidy Scheme is outlined in the National Housing Code which is amended from time to time.

(1995) - Institutional subsidy: The first institutional subsidies were approved. This subsidy is different from the other subsidies because it provided support to all households earning less than R3500 per month.

(1995) – Nurcha was established: Nurcha was established as a RDP Presidential Lead project by the South African Government. The company offered a guarantee to Social Housing Institutions against three months non-payment of rentals. This guarantee has been phased out.

(1996) - National Housing Finance Corporation (NHFC): The NHFC was established mainly to ensure development and appropriate funding for housing projects. The NHFC is to this day one of the primary sources of finance for Social Housing Institutions.

(1997) - Unit to assist social housing institutions: The realization concluded that the creation of housing institutions is a long term intervention and needs considerable capacity buildings and technical assistance, so this unit is established by the NHFC to support social housing institutions who were trying to establish themselves.

(1997) – Residential Landlord and Tenant Act: This was the first legislation of its kind in South Africa and was approved by the Provincial Government of Gauteng. The Act focuses on the following:

- Issues in the rental sector
- Tenant relations
- Managing landlords
- Sets the parameters for the Rental Housing Act

(1997) – The Housing Act (Act No 107 of 1997): The Act focuses on the Three Spheres of Government and the South African Housing Fund. All housing delivery in South Africa must implement this Act.

(1997) - Social Housing Foundation (SHF): The NHFC established the SHF to support and assist the integrated process of sustainable social housing in South Africa. The Social Housing Foundation closed in 2010.

(1998) – Prevention of Illegal Eviction from and Unlawful Occupation of Land Act (Act No 19 of 1998) (PIE Act): This Act prohibits unlawful evictions and details procedures for the eviction of unlawful occupiers. Court ruling interpreted this legislation in ways that undermined the growth of the low income rental housing sector.

(1998) – Presidential Job Summit Project on housing conceived: NEDLAC assembled the Presidential Job Summit Project. The rental housing programme aimed at middle and low income households, and set a delivery target of 150 000 units and a minimum of 50 000 units. Although the target was not met at the end of the timeframe, it served as a basis for understanding the challenges faced in the sector.

(1998) – Housing Institutions Development fund established: NHFC established this fund as the primary credit financier in the social housing sector. It offered three loan products focusing on:

- Pre-establishment
- Capacity building
- Development of housing stock

(1999) – Amendments to the Housing Act (Nos. 28 and 60 of 1999): These amendments recognized the SHF as a national institution supported by government, consolidating government support for the organization.

(1999) – Rental Housing Act (Act No 50 of 1999): It defines the responsibility of the government in respect of rental housing property. The Act sets out the responsibilities and duties of both the landlords and tenants.

(2000) – National Housing Code: The Code provides an overview of National Housing Policy and the Housing Act and details on the Housing Subsidy Scheme. In 2007 a revised Code was published.

(2000) – Support Programme for Social Housing: The Support Programme for Social Housing (SPSH) was established in June 2000. The objective of the SPSH was “*to support the establishment of a viable, sustainable social housing sector in South Africa, and to provide that basis for its future expansion.*” (History of Social Housing: Internationally and in South Africa, 2009). This program was closed down in 2006.

(2002) – National Association of Social Housing Organizations (NASHO) launched: NASHO was established with the objective of becoming the representative body of Social Housing Institutions in South Africa.

(2002) – Court ruling on the PIE Act determines that landlords cannot evict residents without finding alternative accommodation: a High Court ruling established that rental tenants were protected by the Act’s provisions. The implication of the ruling was that if a tenant had been residing in a social housing unit for over six months they could only be evicted if such an eviction was considered just and equitable by a court of law and if alternative accommodation was available. This undermined social housing institutions’ ability to evict non-paying residents as a straightforward exercise.

(2003) – Causes of default in the social housing sector: A study by NHFC looking into the causes of defaults in the social housing sector in South Africa finds that high levels of unemployment, decreasing affordability, lack of end user information, and poor construction quality were among the reasons that led to residents not paying their monthly charges. Further, Social Housing Institutions were found to have inappropriate arrears collection systems and poor default management procedures. It was found that almost all the housing institutions were technically insolvent, requiring second round refinancing and balance sheet restructuring.

(2003) – A Social Housing Policy for South Africa - Towards an enabling social housing development environment in South Africa: This policy was submitted to the Housing MINMEC in August 2003. The policy proposes the establishment of a sector regulating institution and a funding regime that finances the established costs of housing institutions. The policy was later amended in 2005.

(2003) – Launch of the Trust for Urban Housing Finance (TUHF): TUHF was established in June 2003 as a financier of urban rental housing initiatives. TUHF focuses its funding efforts on housing entrepreneurs and housing associations.

(2003) – Development of a Medium Density Housing Development Programme: This programme was linked to the Presidential Job Summit Project and involved the provision of a government subsidy of R27 000 per unit on the basis that an equal or greater amount of loan finance is also raised by the housing institution towards the development cost of the unit.

(2004) – Breaking New Ground: The Minister's new housing policy, "*Breaking New Ground*" is released. Business Plan 4 which is attached to the policy, provides the "Social (Medium-Density) Housing Programme".

(2004) – National Social Housing Task Team established: The Task Team focuses on social housing policy development; progress reports and findings of the Support Programme for Social Housing; international co-operation and co-ordination; and the activities of the key agencies which play a role in social housing, such as the SHF, NHFC, the South African Local Government Association (SALGA) and NASHO.

(2005) – A Social Housing Policy for South Africa: The policy framework developed in 2003 was revised, finalized and approved.

(2007) – Social Housing Bill: The Bill seeks to regulate the social housing industry by establishing a register of social housing institutions. Social Housing Institutions will need to be accredited by the registrar before they will be entitled to apply for funding or support from the NHFC.

(2008) – Social Housing Act (No 16 of 2008): This Act seeks to establish and promote a sustainable social housing environment, to define the functions of national, provincial and

local government in respect of social housing, it provides for the establishment of the Social Housing Regulatory Authority in order to accredit social housing institutions prior to obtaining public funds.

(2009) – Housing Project Process Guide: The Department of Human Settlement issued the process guide in September 2009. A process guide for the following National Housing Programmes:

- Integrated Residential Development Programme
- The Upgrading of Informal Settlement Programme
- The Rural Subsidy: Communal Land Rights

The Housing Project Process Guide will be discussed in more depth in Chapter 6.

These key initiatives mentioned show the changes and progression in housing management for South Africa.

2.3 CURRENT HOUSING CONDITIONS IN SOUTH AFRICA

The most relevant question regarding the current human settlement and housing situation in South Africa, *“is whether or not development in the field of sustainable human settlement since 1994 has served to further the course of sustainable development”* (Department of Housing, 2004:2). *“South Africa is one of the 20 countries in the world who have done loads of work on the issue of slum upgrading as per the United Nations Habitat report”* (Deputy Minister’s Budget Vote Speech, 2011).

The rate of informal and formal housing delivery has increased over the past few years in South Africa. This is due to the large number of households forced to seek accommodation in informal settlements, shacks, backyards and in existing overpopulated formal housing (A New Housing Policy and Strategy for South Africa, 1994).

The population of South Africa is just under 50 million of which more than half is urbanized (Sexwale, 2011). Most of these households live in urbanized areas including informal dwellings, tents, caravans and the already constructed RDP units. These squatter houses are

found mostly in free-standing squatter settlements on the periphery of cities and towns and in the backyards of formal houses (A New Housing Policy and Strategy for South Africa, 1994).

Currently South Africa has 2700 slums in the country with approximately 1.5 million people staying in these slums in poor living conditions (Deputy Minister's Budget Vote Speech, 2011). Some of these slums exist without access to water or sanitation. Access to basic services is essential to sustainable development. The government aims to upgrade 400000 of these by 2014 (Deputy Minister's Budget Vote Speech, 2011). Sexwale (2011b) stated that *“regarding the upgrading of Imljondolo / slums, 1100 of these have been identified for upgrading, out of the 2700 that exist countrywide. The formalization of 206 of these informal settlements has been completed. A further 335 are in the pipeline.”*

This section provides an insight into the statistical profile of housing in South Africa as well as the current housing backlog figures.

2.3.1 STATISTICAL PROFILE OF HOUSING IN SOUTH AFRICA

The information provided in the following paragraphs is mostly derived from Statistics South Africa.

DEMOGRAPHIC PROFILE OF SOUTH AFRICA (2010)

The population size in South Africa has dramatically increased over the last two centuries, and this combined with the large existing and increasing housing backlog, means that the government should increase the rate of the housing projects' productivity.

a) POPULATION SIZE AND POPULATION GROWTH RATE (2010)

The population size in South Africa is 49.99 million people estimated in the middle of 2010 and the average growth rate since 2001 to 2010 is 1.18% per year (Mid-Year population estimates, 2010:4-7). If the average growth rate stays the same, the predicted population size for 2015 would be approximately 53 million people. This implies that the population would grow by approximately 3 million people in the next 5 years.

b) NUMBER OF HOUSEHOLDS (2010)

There are 13.8 million households in South Africa and the average household size nationwide is 3.6 people per household (Millennium Development Goals, 2010:5) (Selected development indicators 2010, 2011:15). It is important that roughly 833,000 housing units be constructed before 2015 just to keep up with population growth, on top of the 2.1 million housing units already required to address the current backlog. Since 1994 the government has hardly been able to break the back of the housing backlog and the numbers keep growing as a result of population growth. (Housing, 2011)

When more specifically focusing on the informal households the following finding is included: The provinces with the highest household percentage of informal dwelling in 2009 were “Gauteng (22,3%), Western Cape (17,1%), North West (16,0%) and Free State (14,8%). Of these provinces, North West has shown a significant increase in the percentage of shack dwellers from 12,2% in 2002 to 21,5% in 2007.” (General household survey 2009, 2011:29)

c) URBANISATION (2010)

There are 62% of people living in urbanized areas and 38% living in rural areas in South Africa. Many of these people would spend part of their working lives in urban areas. The rate of urbanization is 1.2% per year. (South Africa Demographics Profile, 2011)

d) HOUSING RELATED INDICATORS (2010)

Below are several housing related indicators relevant to human settlement in South Africa that could provide a better point of view of the current housing situation.

Table 5: Current housing situation indicators (Selected development indicators 2010, 2011:8)

Indicators	% of households
% of households who live in an RDP or state-subsidized house	18.9
% of households living in informal dwellings/tents/caravans	13.0
% of households who pay rent for a state provided/RDP house	12.6
% of households who fully own their dwellings	58.9

BASIC SERVICE WEAKNESSES

During the 2011 budget speech, Finance Minister Pravin Gordan stated the following: “...total spending on housing, water, electricity, community amenities amount to R122b for 2011/2012 rising to R138b in 2013/2014” (Sexwale, 2011b). Table 6 provides the percentages that describe the wall and roof conditions of the current RDP houses.

Table 6: Basic service weaknesses - Current housing condition indicators (Selected development indicators 2010, 2011:8)

Indicators	% of households
% of households who state that the condition of the walls of their state provided/subsidized housing is weak/very weak	17.2
% of households who state that the condition of the roof of their state provided/subsidized housing is weak/very weak	17.9

a) WATER SUPPLY AND SANITATION (2010)

Table 7 provides the number of households that describes the water and sanitation conditions of the current RDP houses as unsatisfactory.

Table 7: Basic service weaknesses - Water supply and sanitation conditions (Selected development indicators 2010, 2011:13-14)

Indicators	No. of households
# of households with no water supply infrastructure N (‘000)	1,530
# of households with water supply infrastructure less than RDP standard N (‘000)	2,341
# of households with substandard toilet facility N (‘000)	3,514
# of households with no sanitation facility N (‘000)	728

b) ELECTRICITY (2009)

A percentage is provided in Table 8 that describes the electrical conditions of the current RDP houses.

Table 8: Basic service weaknesses - Electricity conditions (General Household Survey (GNS) 2002 – 2009, 2010:12 & 28)

Indicators	% of households
% of households not connected to the mains electricity supply	17.4
% of informal and traditional households not connected to the main electricity supply	50.0
% of RDP/subsidized households not connected to the main electricity supply	6.2

2.3.2 PRESENT HOUSING BACKLOG AND SUBSIDY HOUSES (2010)

CURRENT BACKLOG (2010)

To date the government has built almost three million low-cost houses since 1994, but there is still a very large housing backlog remaining (Housing Backlog Hits 1.2 m, 2011). *“But, as long as the perception of a substantial portion of the population is that affordable housing and free housing is one and the same thing, it is unlikely that the backlog will ever be wiped out.”* (Housing, 2011)

Deputy President Kgalema Motlanthe said it was "not sustainable" for the government to have more than 13 million people dependent on social grants and just expect the government to keep on giving. South Africa annually receives more asylum-seekers than any other country in the world. Approximately 220 000 refugees crossed the borders into South Africa in 2009 and the United States had the second largest count at only 44 000 refugees seeking shelter (Housing, 2011).

Sexwale (Minister of Human Settlements) announced in April (2010) that the housing backlog increased since 1994. The backlog was 1.5 million housing units in 1994 and the current backlog is at plus 2.1 million housing units which translates into approximately 12.5 million people (Housing Backlog Hits 1.2 m, 2011). This increased demand for housing units is reflected in the number of informal settlements or slums that have expanded over time. *“They (informal settlements) are not the creation of government,”* Sexwale says. *“They are, in fact, human parking lots crammed with people hoping and praying to make it into better housing in the cities.”* (Housing, 2011)

The current housing demand is shown in Table 9.

Table 9: Current housing backlog (Selected development indicators 2010, 2011: 8)

Indicators	RSA
% of households receiving a housing subsidy from the state	9.7
% of households with at least one person on a housing demand database/waiting list	13.0
Average time household numbers have been on the housing database/waiting list	
0 – 3 years	48.3 %
4 – 6 years	18.9 %
7 – 9 years	17.5 %
More than 9 years	15.3 %

INCOME PROFILE COMPARISON BETWEEN 1995 AND 2010

a) INCOME PROFILE (1995)

In 1995 the estimated backlog in South Africa was approximately 1.5 million (White Paper on Housing, 1994:11). 39.7 % of the households in South Africa earn between R0 – R800 every month, and a total of 86.1% of the households in South Africa earn less than R3500 every month. A total of 7.15 million households were entitled to subsidies in 1995, whereas 3.3 million households were considered as crucial and the first to receive subsidies. The resources of the government will be dedicated to the poorest section of the population. The income profile of 1995 is shown in Table 10.

Table 10: Income profile – 1995 (White Paper on Housing, 1994:16)

NO.	INCOME CATEGORY	PERCENTAGE	NUMBER OF HOUSEHOLDS
1	R0 – R800	39,7%	3.30 million
2	R800 – R1500	29,0%	2.41 million
3	R1500 – R2500	11.8%	0.98 million
4	R2500 – R3500	5,6%	0.46 million
5	➤ R3500	13.9%	1.15 million
TOTAL:		100%	8.3 million

b) INCOME PROFILE (2010)

The required income must be less than R3500 to be placed on the backlog list. The reason for the monthly income category still being less than R3500 is that the government would prefer to remove the concept of providing houses to the needy. However, this allows for the government to mainly provide for the citizens most in need. (Van Wyk, 2011b). The table

below shows the proportion of households that falls under an income category. The income profile of 2010 is shown in Table 11.

Table 11: Income profile – 2010 (General Household Survey (GNS) 2002 – 2009, 2010:31)

NO.	INCOME CATEGORY	PERCENTAGE	NUMBER OF HOUSEHOLDS
1	R0	0.8%	0.11 million
2	R1 – R1499	29.9%	4.13 million
3	R1500 – R1999	7.8%	1.08 million
4	R2000 – R2499	9.6%	1.32 million
5	R2500 – R2999	5.2%	0.72 million
6	R3000 – R3499	4.9%	0.68 million
7	➤ R3500	46.3%	6.39 million
TOTAL:		104.5%	13.8 million

The number of households was not provided in the General Household Survey (GNS) 2002 – 2009 (2010), and needed to be calculated although the total percentage added up to 104.5%. The number of households is provided to give a rough idea of the current income in South Africa.

AVAILABLE SUBSIDY SCHEMES

South Africa provides several different subsidies to the people that comply with the specific requirements. There are currently seven different subsidies that the government provides. (Housing: Subsidies, 2010).

a) CONSOLIDATION SUBSIDY

This subsidy has been designed to afford previous beneficiaries of serviced stands the opportunity to acquire houses. A top up subsidy to construct a house is granted to beneficiaries with a household income that does not exceed R3 500 per month, while beneficiaries with a household income of between R1 501 to R3 500 per month are required to pay to add an additional R2 479 to the grant.

b) INDIVIDUAL SUBSIDY

This subsidy provides the beneficiaries with ownership of improved residential properties (stand and house) or a house building contract which is not part of approved housing subsidy projects.

c) PROJECT-LINKED SUBSIDY

This subsidy enables a qualifying household to access a complete residential unit, which is developed within an approved project for ownership by the beneficiary.

d) INSTITUTIONAL SUBSIDY

This subsidy is available to institutions which would allow them to create affordable housing stock for persons who qualify for housing grants. This subsidy provides funds for the construction of housing units. The subsidy is paid too approve institutions to provide subsidized housing on deed of sale, rental or rent-to-buy options, on condition that the beneficiaries may not be obligated to pay the full purchase price and take transfer within the first four years of receipt of the subsidy. Institutions must also invest their own capital in the projects.

e) DISCOUNT BENEFIT SCHEME

The Discount Benefit Scheme promotes home ownership among tenants of State-financed rental stock, including formal housing and serviced sites. Occupants receive a maximum discount of up to R7 500 on the selling price of the property. If the discount amount equals or exceeds the original purchase price or loan balance, the property is transferred free of any additional capital charges.

f) RURAL SUBSIDIES

This subsidy is only available on a project basis and beneficiaries are supported by implementing agents. Beneficiaries also have the right to decide on how to use their subsidies either for service provision, on building of houses or on both.

g) PEOPLE'S HOUSING PROCESS

The People's Housing Process (PHP) targets households who want to improve their housing subsidies by constructing or organizing the construction of their own homes. This process is a method of accessing the Project Linked, Project Linked Consolidation, Institutional, or Rural Subsidies as well as technical and other forms of assistance in the house building process.

2.4 THE FUTURE VISION FOR HOUSING IN SOUTH AFRICA

The vision for 2030

“The vision speaks of deraciaizing our society. The idea is to build social cohesion within communities. As human settlement we have moved away from a delivery model that focuses on numeric target alone, towards an outcome approach in the creation of sustainable human settlements improvement of quality of each housing unit we produce.

Our government has 12 outcomes and Human Settlements is outcome 8. Our programme of action galvanizes a range of stakeholders. These include among other national, provincial, local government actors, financial institutions, housing institutions, private sector, CBO's, NGO's and beneficiaries to co-ordinate and collaborate with one another.

As far as different segments of government are concerned we are delighted with the establishment of an implementation forum whose objective is to expedite the implementation.” (Deputy Minister's Budget Vote Speech, 2011)

The vision of the Human Settlements Department for 2030 is to speed up the development of sustainable human settlements for all of South Africa. The mission to achieve this vision is split into four areas:

- Firstly, the upgrading of informal settlements.
- Secondly, the provision of grants for low-cost housing.
- Thirdly, provision of guarantees to banks' lending in gap housing market (household with income less than R16000, thus unable to get a loan of more than R500000 to purchase a house).
- Fourthly, to regulate the activities of financial institutions in respect of their lending practices (Sexwale, 2011a).

The 2030 vision was about providing affordable and good quality shelter. But an important part of the Human Settlements Vision 2030, said Sexwale, is aimed at creating integrated community settlements surrounding facilities and services such as education and job opportunities. The decent human settlements are the ones which have places of worship, sporting facilities as well as important commercial and industrial areas. These facilities and services should be within reasonable distances from residential areas. Sexwale also said that for the vision to be successful the department needs to plan for the youth (the future adults). *"To succeed, the Human Settlements Vision 2030 must be essentially for and by the youth. It is about their future homes, apartments, bachelor flats and so on,"* said Sexwale (Housing Backlog Hits 1.2 m, 2011).

There will have to come a time in the future that the government discontinues subsidized housing, so that people can start doing things for themselves. However, the poor communities cannot be blamed and ignored (Sexwale, 2011b).

2.5 SUMMARY

In order to reach the 2030 vision of South Africa for sustainable housing, several things need to be done. It is very important to evaluate the current housing situation in South Africa, the current conditions of the housing units as well as the current remaining backlog. Studying the historical occurrences and policies are also essential in order to understand where sustainable housing is heading in the future. The most crucial decisions made are to improve the current housing situation now in order to reach the 2030 vision of South Africa. The government decided that the upgrading of informal settlements is high on the agenda instead of constructing houses, because it is not possible to construct houses for everyone at once. This

decision was made because the demand for housing units is very high and the resources are currently limited (Deputy Minister's Budget Vote Speech, 2011).

CHAPTER THREE

THE ROLE PLAYERS AND RESPONSIBILITIES IN HOUSING MANAGEMENT DEPARTMENTS

3.1 INTRODUCTION

This chapter discusses all the different departments (governmental, NGO, private sector) and their management roles and responsibilities towards low-cost housing projects. The chapter firstly starts by discussing the three spheres of government, then secondly narrowing the focus to the 'housing & land' sub-department at a Metropolitan municipality. Thirdly it narrows further towards the departments regarding the construction of the housing projects.

The first sub-chapter discusses the three spheres of government, the roles and responsibilities of the national, provincial and local government towards housing management. Attention will also be given to the roles and responsibilities of the non-governmental organizations (NGO) and the communities involved in the housing projects.

The second sub-chapter focuses on the housing departments within the metropolitan municipalities. Metropolitan municipalities have complete resources within their housing & land department, thus allowing for a proper research scope of the study and still focusing on a local level. Van Wyk (2011b) mentioned that most of the housing management decisions are made at local governmental level. This sub-chapter will also show the organizational structure at local government level.

The third sub-chapter focuses on the departments involved in the implementation phases of the housing projects. This sub-chapter shows the two different project structures for the implementation of the housing projects, from the municipality through the consultant to the contractor.

The five phases of any project, namely initiating, planning, executing, monitoring and controlling, and closing phases of the project, as well as the processes from all the different role players in each of the phases are discussed in depth in this chapter.

As the sub-chapters flow from chapter 3.2 to chapter 3.4, the level of detail focuses towards the physical development departments of housing projects. The Housing Project Manager is located within the physical development departments which are within the metropolitan municipality and manages the implementation of the housing projects. The position of the Housing Project Manager within the different departments is clarified, as the level of detail increases in depth. The flow of this chapter through all the sub-chapters is shown in the Figure 6.

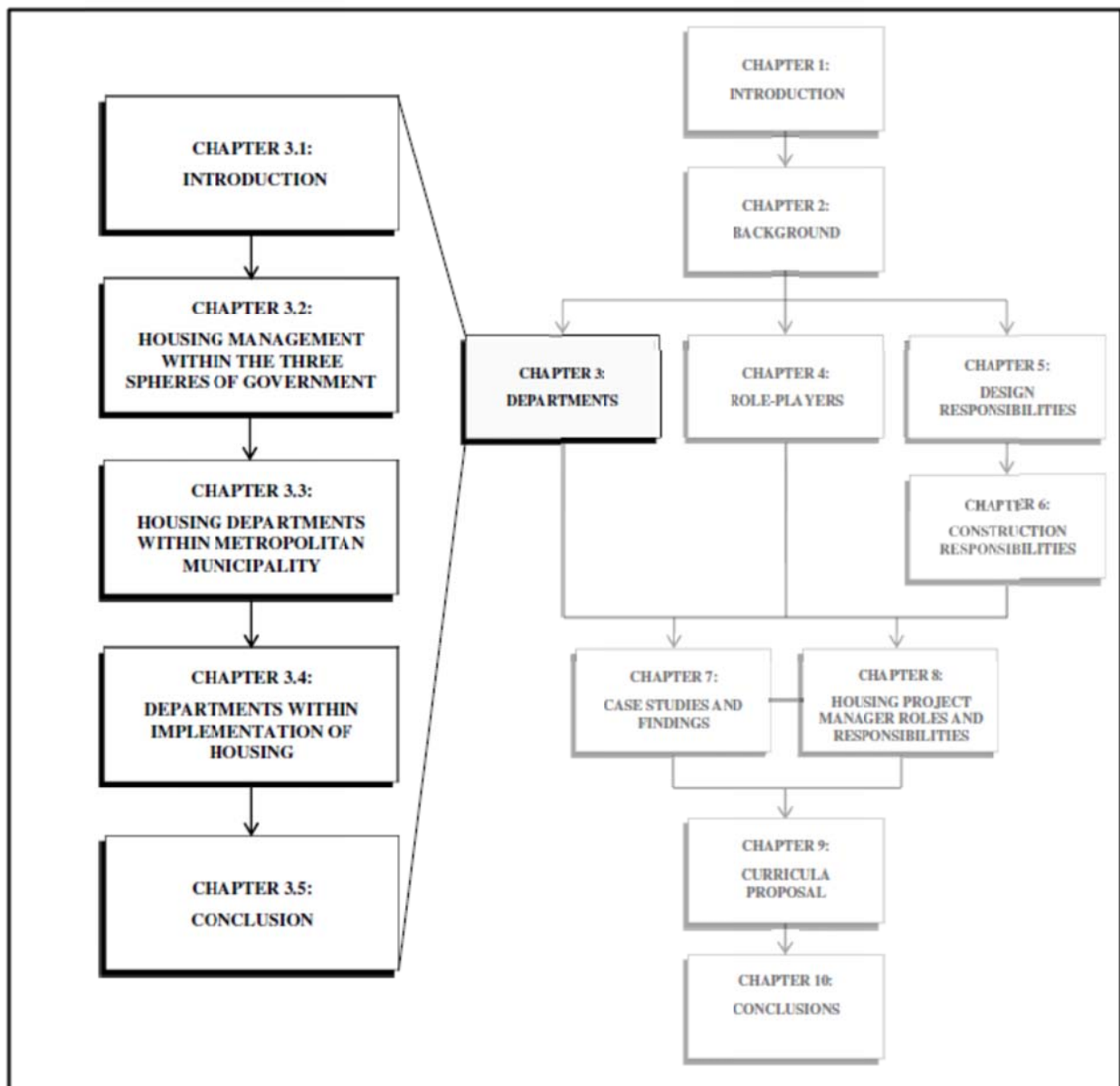


Figure 6: Overview of Chapter 3

The major housing participants are:

- All three spheres of government;
- Parastatals (a government-owned cooperation);
- Financiers;
- Corporate employers;
- Non-Government Organizations (NGOs); and
- Housing associations.

In order to determine the competencies of the Housing Project Manager, the roles that he needs to fulfil as Housing Project Manager within these housing sectors are defined.

There are several different housing management role players and each with their own roles and responsibilities, however sometimes these roles and responsibilities overlap within organizations. Sometimes the interacting roles help to achieve their organizational objectives. These roles have to be fulfilled at the various management levels (senior, middle or operational). (Van Wyk, 2011b). By identifying the role of the Housing Project Manager and his interacting responsibilities with the other housing management role-players, it would assist to determine the competencies, knowledge fields and attitudes that a Housing Project Manager should possess.

This chapter only focuses on the departments involved in housing projects and their roles and responsibilities, whereas chapter 4 discusses the housing management role players which are located within these departments.

3.2 HOUSING MANAGEMENT WITHIN THE THREE SPHERES OF GOVERNMENT

The primary role and responsibilities of the three spheres of government in the housing management processes is discussed in each sub-chapter. According to Van Wyk (2009:197) housing programmes could be planned and implemented at national, provincial or local levels.

The first section of the chapter analyses the three spheres (National Government, Provincial Government, and Local Government) and the primary processes and responsibilities of each of the spheres. Table 12 presents the different procedures within the following identified processes:

- (i) Policy and Strategy;
- (ii) Legislative;
- (iii) Educational;
- (iv) Financial;
- (v) Administrative;
- (vi) Human and Social Development;
- (vii) Physical Housing Programmes and Projects,
- (viii) Environmental; and
- (ix) Maintenance processes.

The above processes are considered in each of the following sectors:

- (i) Central Government
- (ii) Provincial Government
- (iii) Local Government
- (iv) Financiers
- (v) Producers
- (vi) Support organizations
- (vii) Consumers

The role-players and processes are shown in Table 12:

TABLE 12: THE PRIMARY PROCESSES TO BE MANAGED IN A HOUSING SYSTEM, THE THREE SPHERES (CENTRAL, PROVINCIAL AND LOCAL GOVERNMENT) AND THEIR PRIMARY RESPONSIBILITIES. (Van Wyk A.S. & Van Wyk J.J., 2001)

PROCESSES ROLE PLAYERS	POLICY PROCESSES	LEGISLATIVE PROCESSES	EDUCATIONAL PROCESSES	FINANCIAL PROCESSES	ADMINISTRATIVE PROCESSES	HUMAN AND SOCIAL DEVELOPMENT	PHYSICAL HOUSING DEVELOPMENT PROGRAMMES AND PROJECTS	ENVIRONMENTAL PROCESSES	MAINTENANCE PROCESSES
CENTRAL GOVERNMENT	Make policies and set guidelines	Develop Legislation	Fund, initiate and suppose programmes	Budget, subsidies and fund programmes and institutions	Provide a framework	Fund, initiate and support programmes	Fund and facilitate	Initiate, fund and support	Set policy, Support and fund
PROVINCIAL GOVERNMENT	Interpret national policies and prepare provincial policies	Interpret national legislation and prepare provincial legislation	Implement national and provincial programmes	Distribute national funds and top-up where possible	Implement framework and procedures	Implement programmes	Initiate and fund. Appoint programme Management Teams	Support impact	Prepare framework for maintenance management
LOCAL GOVERNMENT	Implement policies	Legislate Apply legislation	Implement programmes	Finance programmes and projects	Implement procedures	Implement programmes	Appoint project management teams	Execute impact studies	Do / advise on maintenance management
FINANCIERS	Participate in policy processes	Apply legislation	Implement programmes	Provide finance	Implement procedures	Implement programmes	Provide finance	Support impact studies	Fund maintenance programmes maintenance
PRODUCERS	Implement policies	Apply legislation	Support programmes	N/A	Implement procedures	Support programmes	Carry out Physical development	Support impact studies	Advise
SUPPORT ORGANISATIONS	Participate	Apply legislation	Conduct programmes	Advise	Implement procedures	Conduct programmes	Advise	Support	Contractors do physical
CONSUMERS	Implement	Apply	Participate and attend	Add own finance	Follow procedures	Participate	Participate	Support	Carry out maintenance

MANAGEMENT OF PROCESSES AT THREE LEVELS: Policy and strategy level, programme level and project

OUTCOMES: Human, social, institutional and physical development

IMPACT / GOALS: Empowered and capacitated communities and improved living

3.2.1 THE ROLES AND RESPONSIBILITIES OF NATIONAL/CENTRAL GOVERNMENT

The role of the National Government towards housing is to initiate and fund most of the processes. It is the responsibility of the National Government to set the guidelines, develop legislation, provide the framework and make the policies that the rest of the role-players should use when executing the management of housing. When considering only the physical housing development programmes and projects, it is the responsibility of the National Government to facilitate and fund those processes as seen in Table 12.

The Social Housing Act (2008) identified the following roles and responsibilities of the national government:

“(1) National government, acting through the minister, must –

- a) Create and uphold an enabling environment for social housing, by providing the legislative, regulatory, financial and policy framework for the delivery of social housing;*
- b) Ensure compliance with its constitutional responsibilities;*
- c) Address issues that affect the growth, development or sustainability of the social housing sector;*
- d) Establish with provinces and municipalities institutional capacity to support social housing initiatives;*
- e) Institute and fund the social housing programme as a national housing programme to promote the development and supply of social housing stock for low to medium income persons;*
- f) Designate restructuring zones submitted by provinces and identified by municipalities and specifically provided for in a municipality’s integrated development plan contemplated in section 25 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000), and may, where appropriate, after due notice in the Gazette, withdraw such designation;*
- g) Establish capital and institutional investment grants;*
- h) Review annually and approve the social housing investment plan and the social housing regulatory plan;*

- i) Allocate funds from the Department's budget for the operational costs and commitments of the Regulatory Authority in accordance with the approved social housing investment plan and the social housing regulatory plan, respectively;*
- j) Determine norms and standards to be adhered to by provinces and municipalities; and*
- k) Monitor the regulatory Authority.*

(2) The cost and expenses connected with the implementation of this Act must be defrayed from money appropriated by Parliament to the Department for that purpose."

3.2.2 THE ROLES AND RESPONSIBILITIES OF THE PROVINCIAL GOVERNMENT

When considering the above mentioned processes, the Provincial Government interprets the legislation and policies of the National Government to prepare their own provincial legislation and policies. When considering the funds for housing, the responsibility of the Provincial Government is the distribution of the national funds and to provide extra services through adding funds where possible. It is also the responsibility of the Provincial Government to prepare the framework for maintenance processes and also appoint programme management teams for the physical housing development processes as seen in Table 12.

The Social Housing Act (2008) identified the following roles and responsibilities of the provincial government:

"(1) every provincial government, through its MEC, must –

- a) Ensure fairness, equity and compliance with national and provincial social housing norms and standards;*
- b) Ensure the protection of consumers by creating awareness of consumers rights and obligations;*
- c) Facilitate sustainability and growth in the social housing sector;*
- d) Mediate in cases of conflict between social institutions or other delivery agent and a municipality, if required;*

- e) *Submit proposed restructuring zones to the Minister;*
- f) *Monitor social housing projects to ascertain that relevant prescripts, norms and standards are being complied with;*
- g) *Approve, allocate and administer capital grants, in the manner contemplated in the social housing investment plan, in approved projects;*
- h) *Ensure that the process contemplated in paragraph (g) is conducted efficiently;*
- i) *Administer the social housing programme, and may for this purpose approve –*
 - (i) any projects in response thereof; and*
 - (ii) the financing thereof out of money paid into the accredited bank account of the province as contemplated in section 18(3); and*
- j) *Develop the capacity of municipalities to fulfil the roles and responsibilities contemplated in section 5*

(2) A provincial government may not interfere with the governance or management of social housing institutions.

(3) Subject to section 11(3) (k), the regulatory Authority may not interfere with the monitoring of social housing projects.”

3.2.3 HOUSING MANAGEMENT OF LOCAL GOVERNMENT

When considering the above mentioned processes, the responsibility of the Local Government is to implement the policies, programmes and procedures of the National and Provincial Government. Most of the housing management takes place at the Local Government level and it is the responsibility of the Local Government to appoint the housing project management teams and to finance the programmes and projects that have been approved. It is also the responsibility of the local government to execute the impact studies on the environment and to ensure the maintenance management as seen in Table 12.

“Local government is regarded as the major development facilitating role player in the implementation of housing policies and strategies, because, according to Habitat (1987:106), local living environments are best managed by that sphere of government.” (Van Wyk, 2009:172)

One of the main service deliveries by the Local Government is the provision of houses to communities in need and the creation of sustainable human settlement in the area of that specific Local Government. The objective of this vision is to ensure that all the citizens have equal access to housing opportunities. This opportunity provided to the community includes basic municipal services, support in achieving housing improvement in their living environments, which includes the necessary social, economic and physical infrastructure. Van der Walddt, et al.,(2007) provided additional information regarding the basic municipal services, presented in chapter 5.

The local government is seen as being in a better position to administer national housing programmes as well as being able to provide greater access to housing for their communities. The key role-players in the housing process are located at local government level (Gounden & Merrifield, 1994:99).

Behrens, Watson and Wilkinson (in Van Wyk, 2009:190) identified the following roles of local government authorities in housing assessment:

- Assessment of housing needs / demand (monitoring the situation)
- Land identification and acquisition
- Establishing subdivision and land development rights
- Project ‘packaging’ (planning, design, costing etc.)
- Securing of development (‘bridging’) finance
- Provision of capital grant subsidy finance
- Provision of supplementary subsidy finance
- Securing of end user credit finance
- Provision / upgrading of bulk and link (‘external’) infrastructure
- Provision / upgrading of ‘internal’ infrastructure
- Provision / upgrading of local public facilities
- House (‘top structure’) construction
- Support for ‘consolidation’ process: materials supply, technical assistance, etc.
- Allocation of completed units
- Setting and collection of rentals
- Arbitration of disputes over lease conditions

- Maintenance / refurbishment of units.

If these roles have to be satisfied by local authorities, proper education is needed for housing professionals.

The White Paper on Housing (1994:36) provides several housing functions envisaged to be achieved at local, rural and metropolitan government. These functions are:

- “Setting metropolitan / local housing delivery goals;
- identification and designation of land for housing purposes;
- the regulation of safety and health standards in housing provision;
- the creation and maintenance of a public environment conducive to viable development and healthy communities;
- the mediation of conflict in the development process;
- the initiation, planning coordination, promotion and enablement of appropriate housing development;
- facilitative support to housing delivery agencies;
- planning, funding and provision of bulk engineering services;
- provision and maintenance of revenue generating services (if not provided by specialised utilities / suppliers);
- provision of community and recreational facilities in residential areas;
- welfare housing;
- land planning in areas under their jurisdiction (in terms of laid down performance criteria, possibly at provincial and even national level); and
- Regulation of land use and development.”

The Social Housing Act was released in order to clarify the roles, duties and responsibilities of the three spheres of government in housing development. The Social Housing Act (2008) identified the following roles and responsibilities to the local government:

“(1) A municipality must, where there is a demand for social housing within its municipal area, as part of the municipality’s process of integrated development planning, take all reasonable and necessary steps, within the national and provincial legislative, regulatory and policy framework –

- a) *To facilitate social housing delivery in its area of jurisdiction;*
- b) *To encourage the development of new social housing stock and the upgrading of existing stock or the conversion of existing non-residential stock;*
- c) *To provide access –*
 - (i) to land and buildings for social housing development in designed restructuring zones;*
 - (ii) for social housing institutions to acquire municipal rental stock;*
 - (iii) to municipal infrastructure and services for approved projects in designed restructuring zones; and*
- d) *To the extent permitted under the Local Government: Municipal Finance Management Act, 2003 (Act No. 56 of 2003), and the Local Government: Municipal System Act, 2000 (Act No. 32 of 2000), to –*
 - (i) initiate and motivate the identification of restructuring zones: and*
 - (ii) enter into performance agreement with social housing institutions.”*

3.2.4 HOUSING MANAGEMENT OF THE OTHER ROLE-PLAYERS

There are several other role-players that play a significant role in the housing industry. The focus of this study is mainly the implementation process of housing projects. From Table 12 the following other role players are identified and their primary responsibilities within the physical housing development process of housing are as follows:

- **Financiers** – Provide the finance for the implementation of the housing project.
- **Producers** – To carry out the development. This includes providing the services of constructing the housing units as well as the construction of the infrastructure for sustainable human settlement.
- **Support organizations** – To provide advice if needed.
- **Consumers** – to provide contribution to the construction.

The Social Housing Act (2008) defined roles and responsibilities for the other role-players as well as for Non-Governmental Organizations (NGOs). These roles and responsibilities are described below.

ROLES AND RESPONSIBILITIES

The roles and responsibilities of the other role-players are identified in the Social Housing Act (2008):

“(1) subject to such directives as the Minister may issue by notice the Gazette, the National Housing Finance Corporation must, in respect of social housing –

- a) Provide access to loan funding;*
- b) Make available to the Regulatory Authority when requested thereof any financial information to enable it to assess the institutional health and financial sustainability of social housing institutions;*
- c) Facilitate or, where possible, provide access to guarantees for loan funding from financial institutions;*
- d) Explore and support mechanisms aimed at facilitating public funding for social housing; and*
- e) Conclude an agreement with the Regulatory Authority aimed at avoiding the duplication of functions and overregulation of social housing institutions.*

(2) Other delivery agents may undertake approved projects in designed restructuring zones with the benefit of public funding to the extent determined in the social housing programme pursuant to agreements concluded with the Regulatory Authority as contemplated in section 11(3) (d) and 19(1) (b) (i).”

NON-GOVERNMENTAL ORGANIZATIONS

The Social Housing Act (2008) also identified several management aspects that social housing institutions are required to follow.

“Management of social housing institutions

15. (1) Each accredited social housing institution must—

- (a) within 90 days of it having attained accreditation, prepare and submit to the Regulatory Authority for approval a corporate governance policy which must address at least—*

(i) risk management and risk strategy policies with regard to, amongst other things, development, operational, financial, property management, human resource, market, institutional and compliance risks;

(ii) internal control and audit models;

(iii) all the requirements of the regulations; and

(iv) any other aspect that may be prescribed;

(b) appoint a competent manager who, through the assistance and support of competent personnel and systems—

(i) is responsible for the day to day management of the social housing institution and the housing stock developed through funding obtained in terms of the social housing programme;

(ii) is responsible for reporting to the Regulatory Authority in terms of this Act;

(iii) is the designated link between the Regulatory Authority and the social housing institution in respect of compliance with this Act or any regulations promulgated in terms of this Act; and

(iv) must ensure accreditation compliance; and

(c) submit to the Regulatory Authority a copy of its performance agreement with the municipality.

(2) The appointment of the manager referred to in subsection (1)(b) must be in writing and a copy of the letter of appointment must be sent to the Regulatory Authority within 21 days of such appointment.

(3) (a) Any vacancy in the office of a manager must, within three months of such vacancy occurring, be filled, or all reasonable steps must have been taken to

fill such vacancy, and a copy of the letter of appointment must be sent to the Regulatory Authority in terms of subsection (2).

(b) During the period of such vacancy the social housing institution must ensure that a competent person acts as manager.

(4) The social housing institutions must consult with the tenants and keep them informed of any rules and prescriptions regarding the management of the social housing units.”

These responsibilities listed for the NGOs help to control social housing projects for the government, and keep the NGOs organized for the government so that no corruption originates from these NGOs. There are several non-governmental organizations in South Africa helping the communities establish their goals and providing them with support services.

Several programmes driven by NGOs, contribute to the environmental sustainability in housing projects as listed below:

- Efficient Lighting Initiative
- Greenhouse project
- Sustainable Energy, Environment and Economic Development (Seed)
- Sustainable Homes Initiative (Shi)
- Trees for Homes Programme
- Urban Sector Network (USN) (‘Towards sustainable settlements: case studies from South Africa’ 2002)

Listed below are the Housing Institution-driven programmes that contribute to sustainability in housing projects for South Africa:

- Peoples Housing Process
- National Urban Reconstruction and Housing Agency (NURCHA)
- Social Housing Foundation (SHF)
- National Housing Finance Corporation

- Rural Housing Loan Fund
- Housing Development Agency
- National Home-Builders Registration Council (NHBRC) ('Towards sustainable settlements: case studies from South Africa' 2002)

COMMUNITY

The community for whom the housing units are constructed is considered as the consumers of the housing units. This indicates that the community falls into the category of the other role-players and therefore there are specific responsibilities required of these communities.

It is believed that the establishment of micro towns, as integrated accommodation, development and productive living environments, has the potential to improve on people's quality of life. Such settlements require the participation of many role players, but should primarily be initiated by communities themselves, facilitated and assisted by local authorities, NGOs, financial institutions and private enterprise. The provision of land and infrastructure by local government can facilitate in the establishment of micro living environments (Van Wyk, 1996). Crofton (1997:43) states that *"The housing functions envisaged for local government will require and encourage much greater interaction between the local authority and the local community, as well as an overall much greater responsibility towards the community, in the area"*.

Communities have an important role in organizing themselves and participating in the process of development, especially in decision making. Their needs should also be clearly communicated to all stakeholders through any available means and channels (Van Wyk, 1996).

"Participation and involvement of communities should be high on the priority of decision-makers, planners, and service providers. It is the role of social scientists and researchers to identify problem areas and provide guidelines in this regard." (Baba, 1998). Van Wyk (2009:189) said that community based knowledge and skills cannot be learned through textbook studies and are in no way inferior to the knowledge of learned professionals, but rather complementary. Housing Management Professionals (HMPs) including the Housing Project Manager should understand and accept their role in interfacing and communicating

with the communities as well as creating and maintaining community participation in order to successfully satisfy them. This should not only be done regarding the policy processes, but also with all the other housing processes.

“The provinces and municipalities will only be able to deliver on mandate of slum upgrading if they put the affected communities at the centre of what is to be done. They need to improve on planning, co-ordination and the management of projects.” (Deputy Minister’s Budget Vote Speech, 2011). In order for this to occur it is important that the communication improves between the ‘Housing & Land’ departments and the communities.

3.2.5 SUMMARY

Discussing the roles and responsibilities of the three spheres of government helps to set the perspective of what is to be expected from the Housing Project Manager. The Housing Project Manager is involved at a local government level, and should understand the roles and responsibilities of all the role players, as discussed in chapter 4.

Jamine (1968:592) reported as long ago as 1968 that housing was slowly becoming a very important function of local government. Van Wyk (2009:185) mentioned that housing still is, and will for a long time be a very important development focus on all levels of government and not only at local government level.

3.3 DEPARTMENTS INVOLVED IN HOUSING MANAGEMENT WITHIN A METROPOLITAN MUNICIPALITY

This section of this chapter focuses mainly on the organizational setup to execute these roles and responsibilities of a municipality in the development of low cost housing units. All municipalities have many functions of which one is to provide housing units for the unprivileged communities in their area. *“An important objective of any recognisable municipality with some standing is to facilitate and actively participate in effective and efficient housing delivery and the creation of sustainable human settlements in its area of jurisdiction.”* (Van der Waldt, *et al.*, 2007).

One vision of the municipality is to ensure that all its community citizens have equal access to housing opportunities, which includes:

- Secure tenure,
 - Basic municipal services and maintenance in achieving incremental housing improvement in living environments,
 - Living environments with the necessary social, economic and physical infrastructure.
- (Van der Waldt, *et al.*, 2007)

Local government is considered as the major development role-player in the implementation of housing policies and strategies. This is because, according to Habitat (1987:106), local living environments are best managed by the local government. According to Van der Waldt, *et al.* (2007) the housing department within the municipality should not only be responsible for the implementation of the housing units but also for the land administration, e.g. the residential purposes and valuation services.

The Draft Housing Bill (1996) identified six different ways in which the local government could contribute in any national housing programme. These are:

1. Promoting a housing project by a developer
2. Fulfilling the role of a developer
3. Entering into a joint venture contract with a developer
4. Establishing a separate business entity to execute a housing development project
5. Administering a national housing programme within its area of jurisdiction
6. Facilitating the participation of other role-players in the housing process

Touzel, Coetzee and Von Eck (in Van Wyk, 2009:187) give a local authority viewpoint on housing strategy implementation. This starts with the strategy formulation at national and local levels of government (as contained in the integrated development plans (IDPs) which will be discussed in chapter 5).

The following three sub-sections provide municipal organization structures. The first sub-section provides a typical municipal organogram that shows the location of the housing department within the municipality. The second sub-section provides the different municipal structures with emphasis on the Traditional Metropolitan Council model. The third sub-section provides the list of the ideal board of directors for the sub-department 'Housing & Land' located within a metropolitan municipality.

3.3.1 TYPICAL MUNICIPALITY ORGANIZATION STRUCTURE

Figure 7 provides a typical municipal organogram, in which one of the sub-departments on the organogram is 'Housing & Land'. This department is considered responsible for all housing processes within the local authority.

Housing projects are typically managed from the 'Housing & Land' sub-department, but in order for housing projects to be successful, most of the sub-departments in the diagram need to collaborate and need to communicate sufficiently.

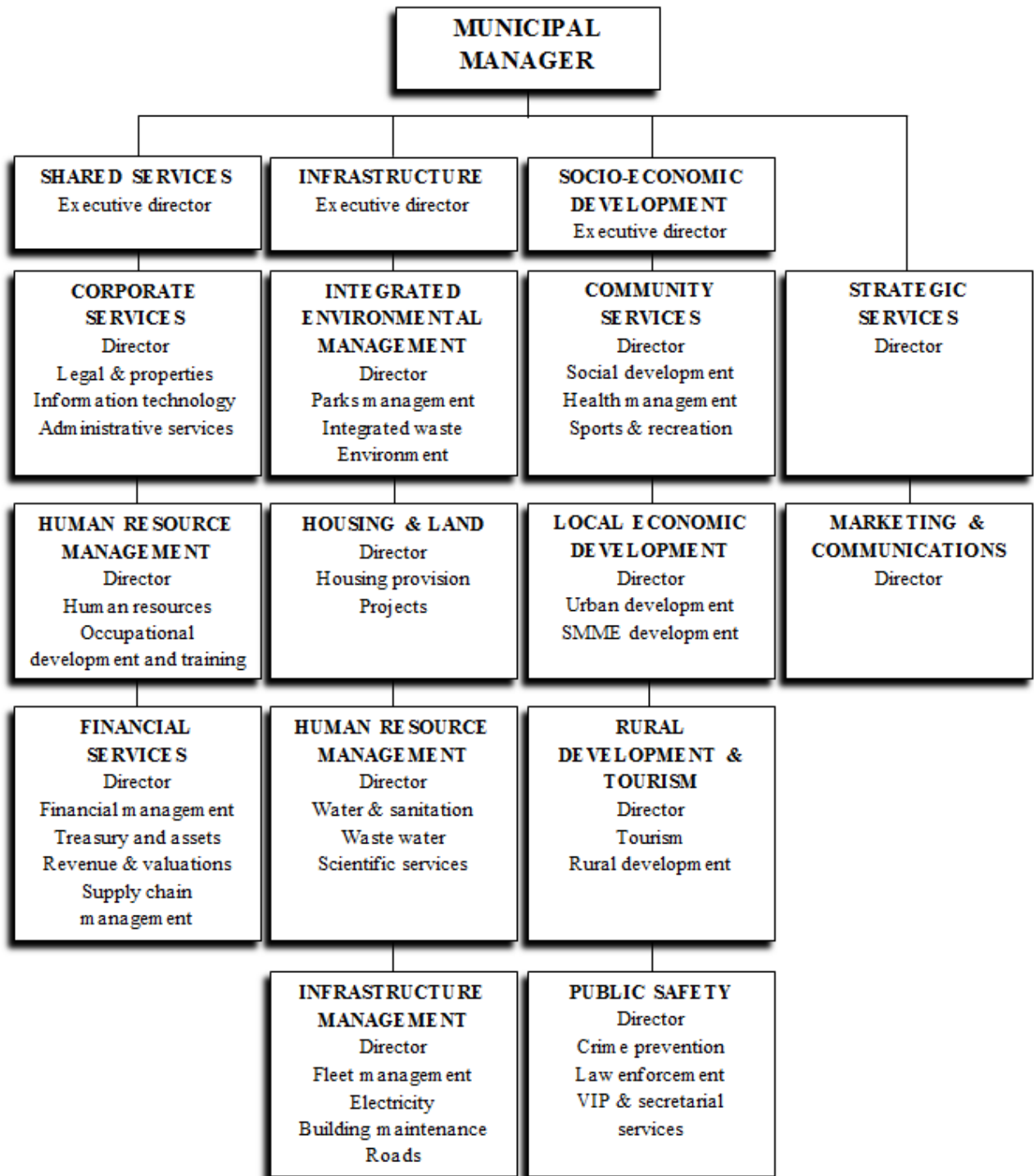


Figure 7: A Typical Municipal Organogram (Van der Waldt, *et al.*, 2007)

3.3.2 LOCAL GOVERNMENT STRUCTURES

The following four broad local government structures or models are presented in the LGTA, 1993 (no. 209 of 1993):

- Metropolitan local government model consisting of Traditional Metropolitan Councils (TMC) and substructures.
- Traditional local councils (TLC)
- Local Government Co-ordinating Committees (LGCC) and
- Rural local government model (district councils).

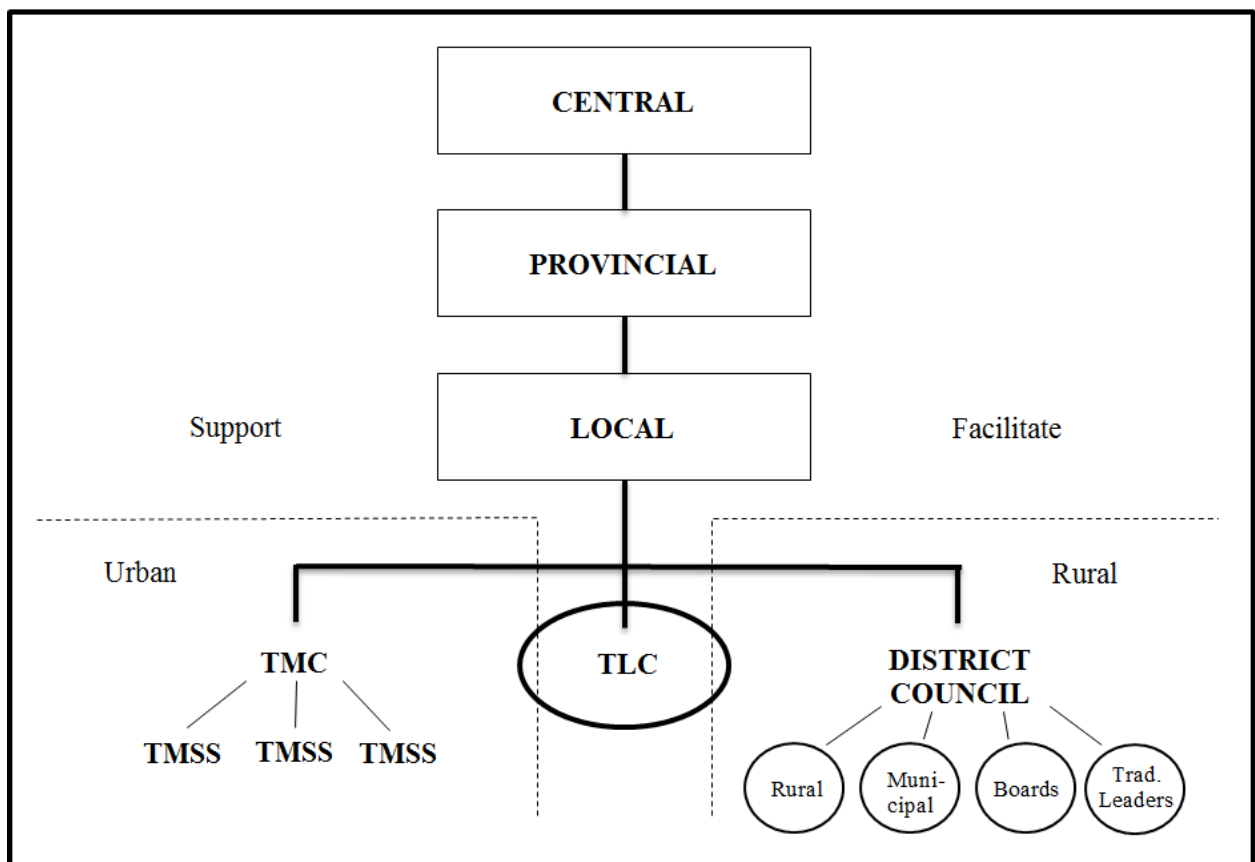


Figure 8: Local Government Structures (Crofton, 1997)

This section only focuses on the Traditional Metropolitan Council model, since large scale housing projects are assigned by the metropolitan municipalities.

The TMCs are not directly responsible for housing delivery projects, as this was seen as a function of one of the TMSS (Traditional Metropolitan substructures), as seen in Figure 8. Crofton (1997:17-18) points out that the TMSS are considered to be closer to the community, and therefore it is suitable that the housing projects be managed at this level.

The TMSS 'Housing & Land' which manages the housing projects will be discussed in chapter 3.3.3

The MLC (Metropolitan Local Council) is located within the TMC and the power and duties of the MLC are:

1. "Recovery of costs
2. Integrated development plan
3. Provision of water
4. Sewerage
5. Electricity
6. Roads
7. Traffic matters
8. Waste disposal
9. Cemeteries and funeral parlours
10. Airports
11. Libraries
12. Amusement facilities and beaches
13. Public nuisances
14. Environmental affairs
15. Tourism
16. Municipal health services
17. Billboards and advertisements
18. Building control
19. Cleansing
20. Business licensing
21. Animals
22. Markets

23. Pontoons, ferries, jetties, piers and harbours
24. Street trading
25. Lighting
26. Public places
27. Fireworks
28. Child care facilities
29. Municipal law enforcement agency” (Statutes of the Republic of South Africa 1996:schedule 2A (9))

Most of these duties and powers of the MLC are crucial components of housing.

Housing is not specified as a function on its own in the LGTA Second Amendment, 1996 (Act no 97 of 1996), but is seen as part of the integrated development plan (IDP) that the MCs and MLCs have to put in place.

The National Department of Human Settlements are the coordinating department, whereas the other participating stakeholders as identified by Sexwale (2011b) are:

- Water affairs
- Rural development and land reform
- Public enterprises
- Cooperative Governance and Traditional Affairs
- South African Local Government Association
- Provinces, and
- Accredited municipalities.

Housing is more than the construction of houses, it is the management of human settlements.

3.3.3 BOARD OF DIRECTORS

Within each of the municipal sub-departments (e.g. ‘Housing & Land’) there are several important subsectors that need to communicate and collaborate with each other throughout the entire housing project. The subsectors are shown in Figure 9 and a short description is provided for each of these subsectors.

“In the larger municipalities, the organisational unit responsible for housing usually forms part of the unit allocated with the macro task of development planning in the municipality administration.” (Van der Waldt et al, 2007)

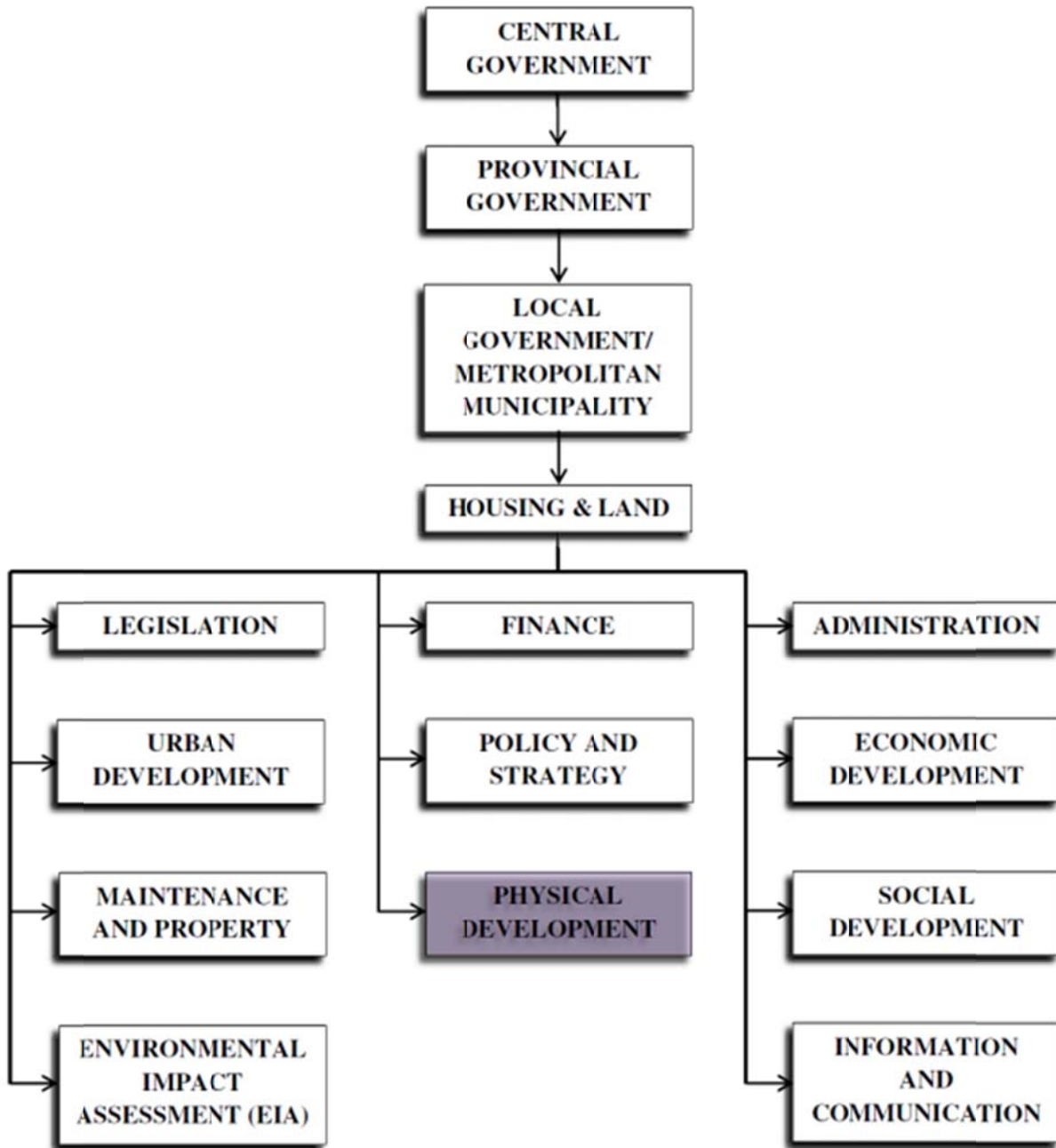


Figure 9: Housing & Land board of directors

This section lists and describes the present departments in the ‘Housing & Land’ board for a metropolitan municipality. The list of ‘Housing & Land’ substructures and most of the information discussed below was obtained through consulting with Van Wyk (2011a) via email.

PHYSICAL DEVELOPMENT

This department is where the built environment’s role-players (including civil engineers and building inspectors and other technical disciplines) execute their roles in the construction of the housing units. The NMBM calls this the ‘Housing Delivery’ and this is where the Housing Project Manager is located and where he manages his roles and responsibilities. It is important that good cooperation and collaboration is achieved with the other departments shown in Figure 9.

Further information regarding the roles and responsibilities of the physical development department is discussed in chapter 3.4, for the role players within the physical development department are discussed in chapter 4, the service responsibilities in chapter 5, and the implementation roles and responsibilities in chapter 6.

LEGISLATION

This department focuses on all the legal features of housing. This does not just include the housing delivery of poor communities, but any legislations related to property and housing (e.g. transfer of properties, where citizens are assigned to housing units, etc...)

FINANCE

This department is where all the funding is distributed from, after the funds have been handed over from the national and provincial governments as well as non-governmental financial organizations. All the financial characteristics are managed from this department, including the housing programmes and housing projects as well as the financial calculations and financial management.

ADMINISTRATION

This department focuses on the management of all the departments within the 'housing & land' board as an organisational unit. This includes aspects such as human resources, education and training within 'Housing & Land'.

POLICY AND STRATEGY

This department focus on the assembling and implementation of the policies and strategies put in place to support the poor communities in receiving a sustainable housing environment.

ECONOMIC DEVELOPMENT

This department focus on the economic development of the new sustainable developed area. The purpose of the department is to build and strengthen the economic capacity of this area to improve their quality of life and their economic future. This includes creating jobs, new businesses, etc... The wider the range of jobs, the more services people can provide for each other the more money would be circulated. (Van der Waldt, *et al.*, 2007:144)

MAINTENANCE AND PROPERTY

This department focuses on the maintenance of already existing housing areas as well as the upgrading of these housing areas in order to keep these areas sustainable. This includes the upgrading and renewal programmes set in place by the municipality.

URBAN PLANNING

The main focus of this department is the planning of a new sustainable settlement. This includes the planning of the entire housing project, from job creation to the impact of a new development on the formal settlements in the area. This can sometimes include the physical planning of the housing.

SOCIAL DEVELOPMENT

This department focuses on the development of the communities social services. This includes the provision of basic services such as equal access to health, welfare, education,

safety, sport and recreation (Van der Waldt, *et al.*, (2007:153). This can also include the community functions to increase the participation of the community towards the project.

ENVIRONMENTAL IMPACT ASSESMENT (EIA)

This department focuses on the environmental impact of a new formal settlement on the surrounding environment and the impact this new settlement would create for the surrounding environment in the future.

INFORMATION AND COMMUNICATION

This department focuses on the information required and the communication between all the departments as well as between the government and the communities involved in the projects. This includes aspects such as the waiting list, databases, GIS, public relations, etc...

SUMMARY

Although it is the responsibility of the Information and Communication department to facilitate effective communication between the different departments, it is also the responsibility of the Housing Project Manager located in the Physical Development department. Even if the physical development process of the housing units is the main responsibility of the Housing Project Manager, he also requires the ability to manage efficiently and effectively between all the different functions within a housing project.

The Housing Project Manager should be educated to some extent in the roles and responsibilities of the other role players.

Not all the municipalities are necessarily have similar organisational structures, for some municipalities have the 'Infrastructure' sub-department (as seen on Figure 8) managing the design and construction of the housing units in close collaboration with the 'Housing & Land' sub-department. Within some municipalities the Local Economic Development sub-department manages the funds of the housing project in close collaboration with the 'Housing & Land' sub-department.

3.4 ROLE PLAYERS WITHIN THE BUILT ENVIRONMENT

This section of the chapter shortly discusses the roles and responsibilities of the main role players working within the physical development directorate where the Housing Project Manager is located. This section also provides a short discussion of the two types of structures between these departments. The information in this section is derived from consulting with Keuler (2011).

3.4.1 THE MAIN ROLE PLAYERS WITHIN THE DEPARTMENT OF PHYSICAL DEVELOPMENT

The two main role players within the physical development phase of a housing project are the design consulting firm and the construction contractor firm as shown in Figure 10 as well as in Figure 1 in chapter 1.

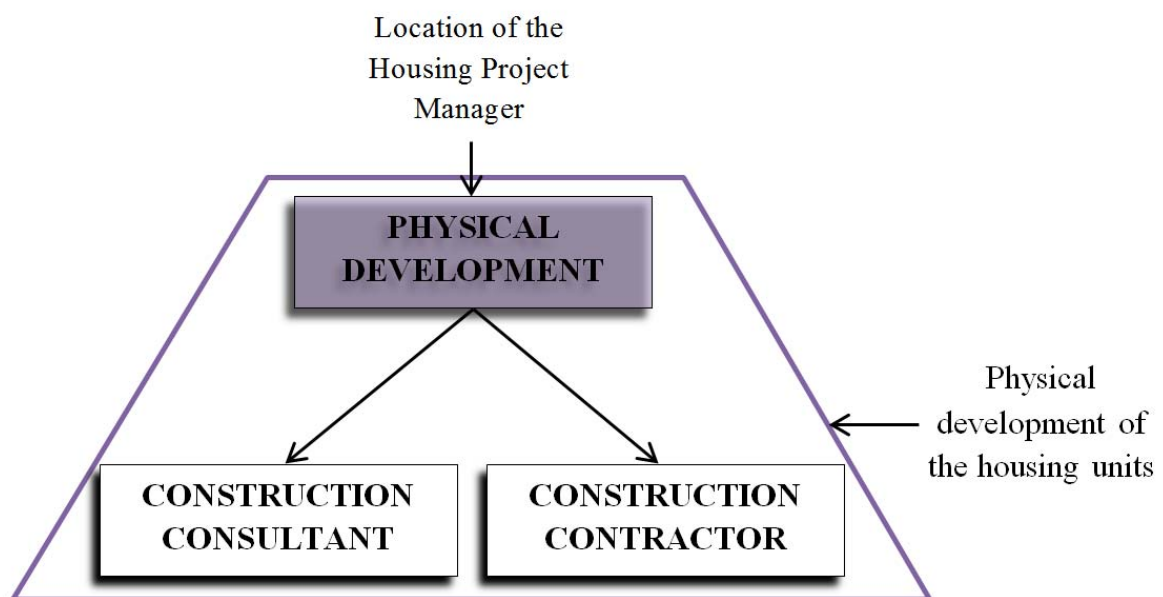


Figure 10: Housing & Land –physical development department structure

- The Design Consultant firm provides the professional team and each team member has an individual role and responsibility. The professional team is managed by its project managers throughout the entire project. This is discussed in depth in chapter 4.3. There may also be more than one firm, providing diverse services such as: urban

planning, architecture, engineering services (water, electricity, houses), etc. This is discussed in depth in chapter 5.

- The construction Contractor has the responsibility to construct the entire project (the top structures, roads, water systems, etc.). Normally more than one contracting firm is required to construct the infrastructure, for each structure constructed (roads, buildings, water systems, etc.) requires a contractor that specialises in the specific field.

Housing projects consist of several design consulting and construction firms. There are several services that are required from a housing project, such as transport, roads, electricity, water systems. Each of these infrastructure services requires their own design consulting and construction contractor firms.

The specific services required and constructed are individually discussed in chapter 5.3.

3.4.2 HOUSING PROJECT STRUCTURES (WITHIN THE IMPLEMENTATION PHASES)

This section describes the different project structures used when executing the construction of housing projects. There are two types of project structures when executing with housing projects identified by Keuler (2011):

THE TRADITIONAL PROJECT STRUCTURE

The traditional project structure is normally set in motion when the municipality accepts to manage the entire housing project. The municipality manages the entire project through appointing all the required housing specialists (public sector or private sector) separately. The municipality takes full responsibility for all the management phases regarding the development. This project structure normally creates an excessive amount of responsibilities and administration for municipality.

Alternatively, the physical development directorate appoints the design consultant and construction contractor firms for the implementation phase of the project. The design consultant appoints a Housing Project Manager to coordinate and manage the entire implementation phase of the project as well as the implementation teams. Therefore, the

appointed Housing Project Manager can be located within the municipality or within the design consultant firm and has the responsibility to communicate between the consultant and the construction firms. The assigned Housing Project Manager also needs to liaise and provide feedback to the board of directors within the 'Housing & Land' sub-department, where he needs to communicate with all the other subdivisions as mentioned in chapter 3.3.3. The traditional project structure is provided in Figure 11.

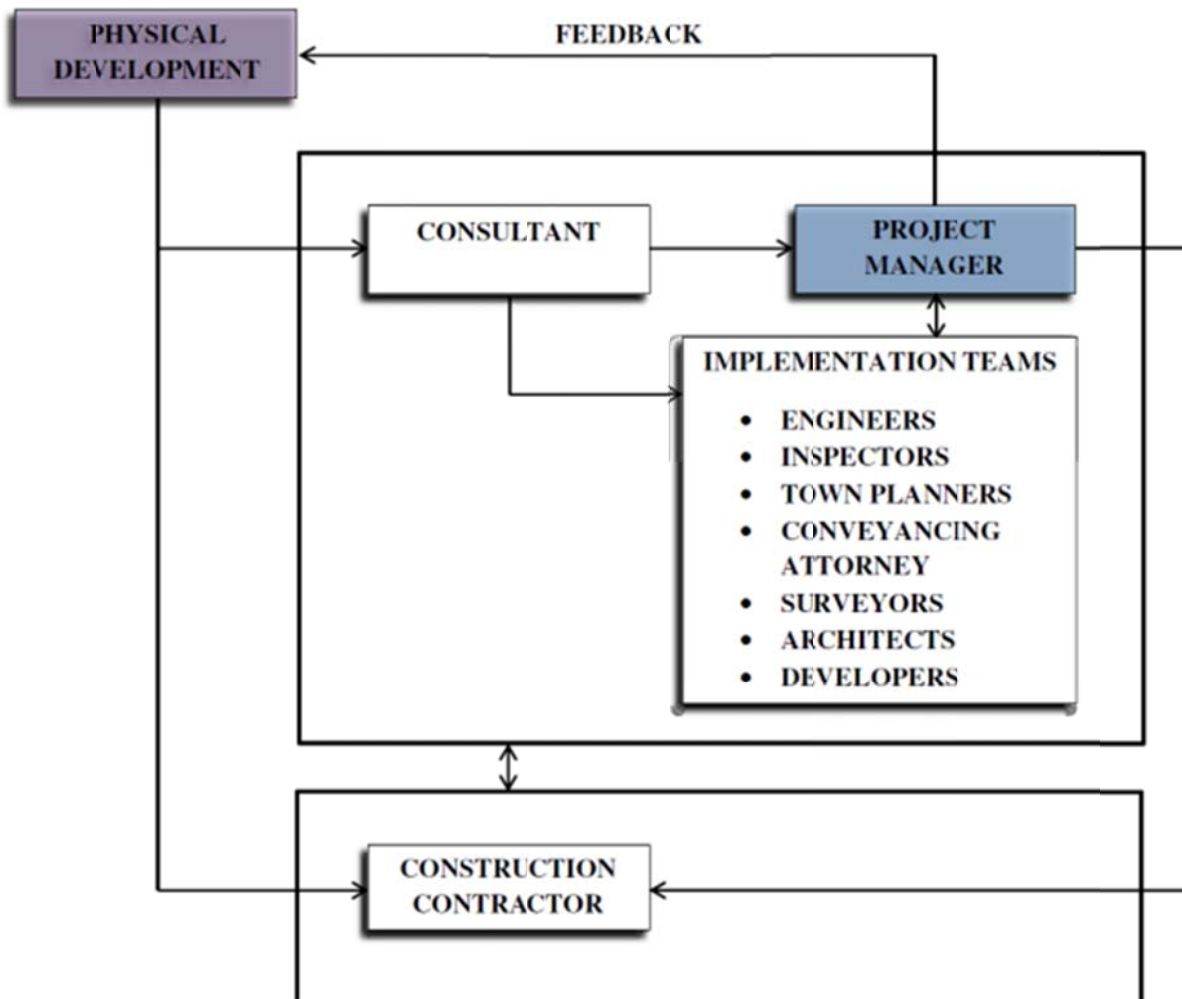


Figure 11: The Traditional Project Structure (Keuler, 2011)

THE PROJECT STRUCTURE USING AN IMPLEMENTATION AGENT

In this approach the municipality appoints a private sector company to manage the implementation phase of the project where most of the disciplines are within the appointed company. Another term for this is assigning a mini-municipality to the project. This allows

most of the housing projects to be performed by the same team, where most of the team members are already familiar with the roles and responsibilities of each other, for this creates more effective and efficient work environment. This project structure also relieves the municipality from most of the excessive responsibilities and administration responsibilities, through transferring the responsibility and administration responsibilities to the appointed implementing agent.

The municipality therefore appoints the implementing agent to take over their roles and responsibilities with the development of the housing project. The implementing agent now acts on behalf of the municipality and the project structure from there on continuous similar to the traditional project structure. The Housing Project Manager is now appointed through the implementing agent, but the role and responsibilities of the Housing Project Manager are mostly similar to that of the traditional project structure. The implementing agent “mini municipality” project structure is provided in Figure 12.

There are some differences between the role of the project manager appointed in the traditional project structure and the role of the project manager appointed as part of the implementing agent. In some cases the project manager is appointed from within the implementing agent and not from within the consultant, thus managing the project using the resources provided by the implementing agent.

This is the project structure used by all implementing agencies e.g. Asla Devco. The implementing agency normally has their internal professional team and several external contractors that they appoint and that they are familiar with.

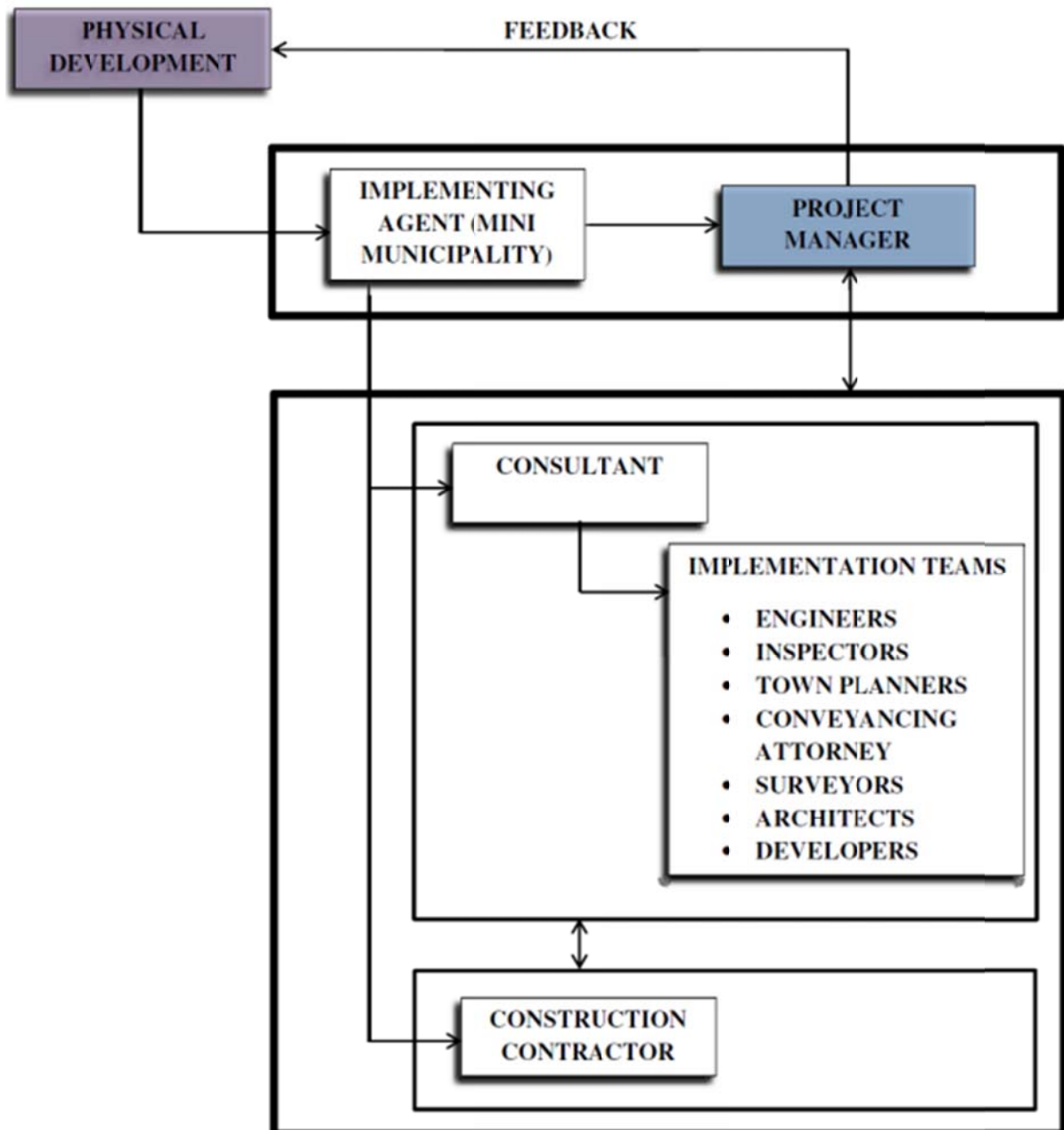


Figure 12: The Project Structure using an Implementing Agent (Keuler, 2011)

3.5 CONCLUSION

The Housing Project Manager is located within the physical development function and cooperates with all the Housing & Land departments as discussed in chapter 3.3.3, while managing the execution of the housing project. All the different role players and their roles and processes for the development for housing projects are defined in this chapter. It is essential that the Housing Project Manager understands these different roles and

responsibilities to manage these different role players effectively, especially at local government level.

The Housing Project Manager is the principal agent for the municipality and has the responsibility to liaise and provide feedback directly to the municipality (board of directors) as seen on Figure 11 and Figure 12. Another responsibility of the Housing Project Manager is to assemble and manage the professional team, also seen in Figure 11 and Figure 12. It is clear that the Housing Project Manager provides the communication network between the municipality and the professional team. It is important that the Housing Project Manager understands the role and responsibilities of both the municipality and the professional team. The individual members within the professional team will be discussed in chapter 4.3.

Table 13: Identified responsibilities in Chapter 3

Civil Engineering Responsibilities	Housing Management Responsibilities
<ol style="list-style-type: none"> 1. The roles of the design consultant 2. The roles of the construction contractor 	<ol style="list-style-type: none"> 1. Housing Policies 2. Housing Processes 3. The roles of the different departmental/sector role players 4. The roles of the different 'Housing & Land' directors within the municipality 5. The Social Housing Act 6. The different Housing Project Structures 7. Communication between different role players

Table 13 identifies several education and training requirements obtained from this chapter for Housing Project Managers. Most of the functions described in this chapter are unfamiliar to Civil Engineers, especially the roles of all the different role players. Civil engineers already possess most of the responsibilities described in chapter 3.4, except for the different project structures used for housing projects.

CHAPTER FOUR

THE HOUSING MANAGEMENT ROLE PLAYERS INVOLVING THE IMPLEMENTATION PHASES

4.1 INTRODUCTION

According to Van Wyk (2011b) the roles of Housing Management Professionals have been unclear, and this has led to a need to clarify the roles of housing managers.

According to Crofton & Van Wyk (n.d.:17-18) practitioners and academics are struggling with the multi-disciplinary nature of housing and the lack of clarity on the definition of a South African housing professional further aggravates the situation. These disciplines are:

- Agriculture
- Architecture
- Civil engineering
- Construction management
- Development studies
- Geography
- Project management
- Property development & management
- Public and development management
- Quantity surveying
- Real estate
- Town and regional planning

This chapter focuses on the clarification of housing management as well as identifying the role players within the implementation phases of the housing project. This chapter first discusses the roles of HMPs (Housing Management Professionals) and secondly the roles of the built environment professionals / the professional team referred to in chapter 3. The flow of this chapter is shown below in Figure 13.

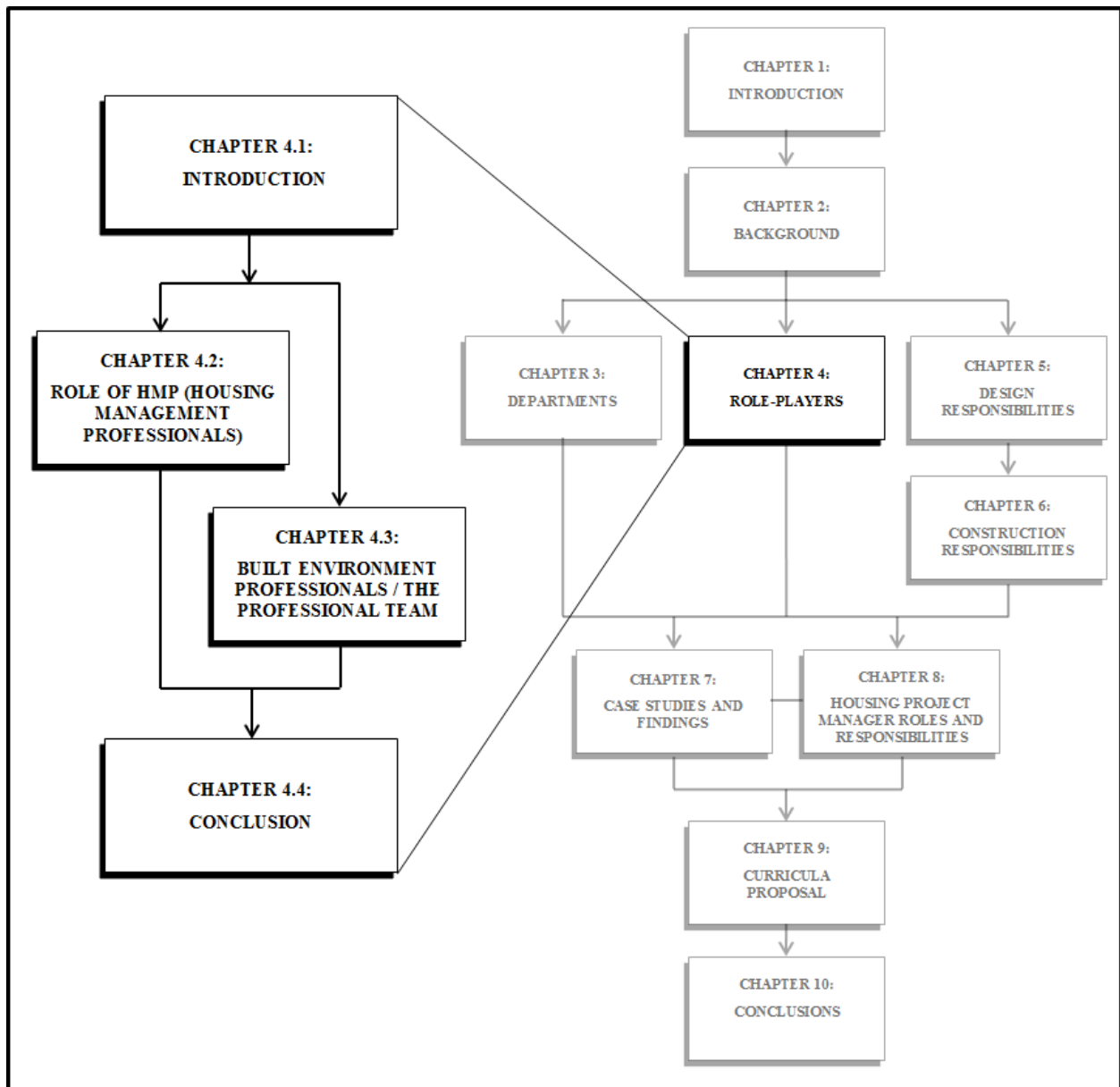


Figure 13: Overview of Chapter 4

This chapter is divided into two categories; the Housing Management Professionals and the Built Environment Professionals (the Professional Team). The management and communication between these two groups are mainly through the Housing Project Manager as seen in Figure 14 and in chapter 3.4. (Keuler, 2011; Delport, 2011). As identified in chapter 3.4, the Housing Project Manager provides feedback to the ‘Housing & Land’ department within the municipality where the Housing Management Professionals are

located. It is clear that discussing each of these groups and their individual role-players in depth would help clarify the role and responsibility of the Housing Project Manager.

Figure 14 was derived through combining the relevant information regarding the Housing Project Manager. The following sources contributed to the assembly of Figure 14:

- Keuler, J (2011) mentioned (in chapter 3.4) that the project manager is responsible for the communication between the municipality (HMPs located within the 'Housing & Land' department) and the professional team.
- Van Wyk (2009:170-224) identified the roles and responsibilities of HMPs (Housing Management Professionals), where only some of these HMPs are discussed in chapter 4.2 as shown in Figure 14.
- Hauptfleisch & Sigle (2007) identified the roles and responsibilities of the professional team (Built Environment Professionals) as discussed in chapter 4.3.

Through combining this information, Figure 14 is developed. This figure indicates the communication that is required of the Housing Project Manager in order to execute the housing project. The subsections of this chapter are also indicated on Figure 14.

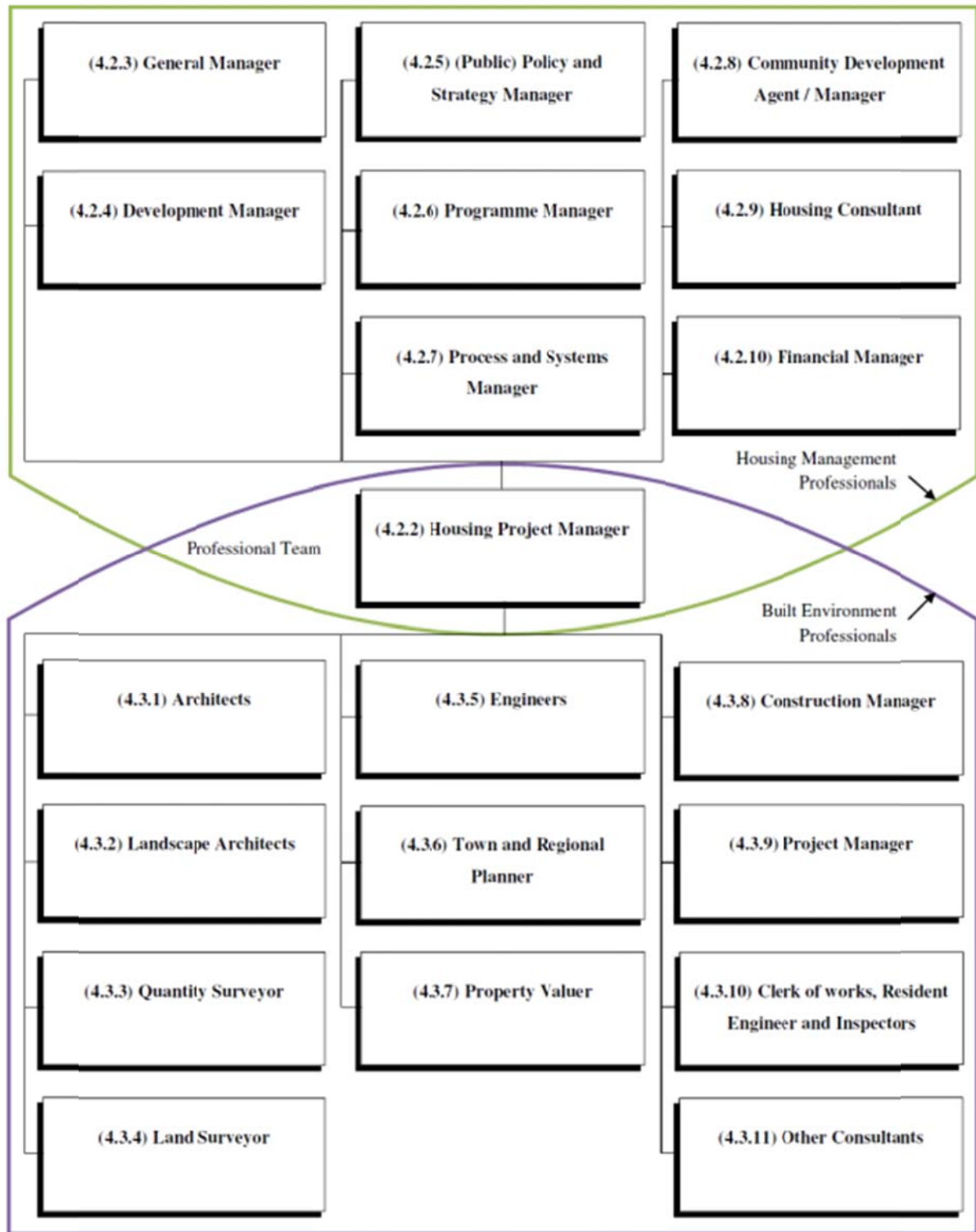


Figure 14: Relationship of the Housing Project Manager regarding the Housing Management Professionals and Built Environment Professionals

4.2 THE ROLE OF HMPs (HOUSING MANAGEMENT PROFESSIONALS)

This section in chapter 4 analyses the different HMP (Housing Management Professional) positions and each of the roles and responsibilities that a HMP should fulfil. Van Wyk (2009) defines eighteen different roles for Housing Managers: several of these roles will be discussed individually and their importance to the housing industry.

In order to identify the skill set required for a Housing Project Manager, it is necessary to review the available literature of all the management role players regarding housing management. Only the role players that have a direct influence on the responsibilities of the Housing Project Manager will be briefly discussed as seen in Figure 14.

The information within chapter 4.2 of the study was mostly gained from the 'Formulation of a housing management model for developing countries with specific reference to South Africa' study of Van Wyk (2009).

4.2.1 THE GENERAL DEFINITION OF A HMP (HOUSING MANAGEMENT PROFESSIONAL)

The main function of HMPs would be to simplify the housing processes and to co-ordinate between all role players in housing sub-sectors at all the different levels. The HMPs could also assist communities with establishing institutions, procuring funds and planning projects (Van Wyk, 1996:227-228).

The most important roles that the HMPs should be able to fulfil are leadership and process management roles. They should also have a better understanding of the technical aspects of housing, such as town and regional planning, house designs and services, construction processes and maintenance processes. However, there are several other roles that HMPs have to fulfil, such as policy and strategy development and management, programme management, project management, estate management and community development management.

The Housing Project Manager acts as agent between the municipality and the professional team. The Housing Project Manager is a HMP within the professional team and assist with the technical inputs into the tasks of both the HMP and the professional team. The inputs

from the HPM are therefore most relevant in the conceptual phase of the project as described in chapter 4.2.2.

According to Turner (1980:151) the development and management of a large new community requires considerable administrative and professional resources organised in an integrated team and given strong and responsive direction. These executive functions will preferably become the responsibility of a managing director who, with a team of professional officers, will perform the task of planning, developing and running the new town.

The HMP roles identified by Van Wyk (2009:170-224), which are discussed in this section, have been identified from general management, housing management, public management, development management and business management. The description of these roles is based on research findings within developing countries.

4.2.2 THE MANAGERS OF THE PHYSICAL DEVELOPMENT PROCESS (HOUSING PROJECT MANAGERS)

The Housing Project Manager should not take over the services of the built environment professionals, because each role-player in the professional team has his own responsibilities. However, the Housing Project Manager should not be fully separated from the physical development processes and should still fulfil the role of overall co-ordinator of all role players and management of the processes. This is done while the professional team is mainly involved with the land-use planning, design, construction and physical maintenance of engineering services and houses as explained by Carmona, Carmona & Gallent (2003:40) and in chapter 4.3. The responsibilities of the Housing Project Manager include:

- identification of a housing opportunity;
- a feasibility study;
- financing;
- overseeing the design and construction; and
- marketing and maintenance.

These roles require insight into aspects such as project and financing proposals, administration of tender procedures, selection of professionals and contractors, allocation of

contracts and other duties. Therefore it is identified that an engineering background with a comprehension of the other HMP roles would benefit the role of Housing Project Managers.

The role and responsibilities required from the Housing Project Manager will be discussed in great depth in chapter 8.

4.2.3 THE GENERAL MANAGERS

Because housing management has a multi-disciplinary nature, HMs should be able to fulfil a general (business) management role. This role includes administration, financial management, operational management, marketing management, human resources management and the general management roles including planning, organizing, leading and controlling. The General Manager should maintain control and authority over the processes of work, people and their work relationships (Van Wyk, 2009:179-182).

4.2.4 THE (PUBLIC) POLICY AND STRATEGY MANAGERS

The main roles of the (Public) Policy and Strategy Manager are managing policy and strategy, legislative and judicial roles, and simplification of the housing processes, as the HM should be able to understand all these functions. Non-government organizations (NGOs) and private sector also needs HMPs to prepare policies and strategies for their organization. HMPs should especially in the public sector, fulfil housing policy-making and execution roles (Van Wyk, 2009:184-185).

4.2.5 THE DEVELOPMENT MANAGERS

Van Wyk (2009:191-192) describes that since housing is a sector of development that requires policy specialists and managers, it is important for HMPs to fulfil the role of development management. Development management should not be done on a national level, but should be managed at local level, in consultation with the beneficiary communities.

4.2.6 THE PROGRAMME MANAGERS

According to Engelbrecht (in Van Wyk, 2009: 197), programme management is often interchangeably used with project management, whereas this causes confusion in communication and between programme and project managers. Programmes usually have a

longer life cycle than projects, and also the position of a programme manager is usually more permanent than that of a project manager. Programme managers are normally involved in strategic decisions regarding the choice of projects for a programme. There are additional factors to take care of during housing programme implementation. These factors include participation and empowerment of communities, and the communication between these role players (Kotze, 1997:51-53). Kotze (1997:54-56) also identifies the following stages of a programme cycle:

- i. identification;
- ii. preparation;
- iii. appraisal;
- iv. negotiation;
- v. implementation;
- vi. monitoring; and
- vii. evaluation.

4.2.7 THE PROCESS AND SYSTEM MANAGER

Van Wyk (2009:184) identifies that housing processes needs to be managed, which includes: policy, strategy, finance, legislation, administration, social development, education, information, environment, physical development and maintenance processes. These processes are relevant to housing management which concludes that HMPs should be able to manage housing processes.

4.2.8 THE COMMUNITY DEVELOPMENT AGENTS / MANAGERS

According to Swanepoel and De Beer (1998:61), the co-ordination of community development is mostly absent with housing project and practical examples are not well documented either. This indicates the urgent need to co-ordinate the role in development that could be filled by HMPs. Lombard (1991:220-226) defines the work scope of a community developer in relation to the development dimensions of physical, social, economic and political development. Lombard (1991: 214-220) also confirms the multi-disciplinary nature of community development.

4.2.9 THE HOUSING CONSULTANT

Barkin (in Burgess, Carmona and Kolstee, 1997:270-271) stated that the role of housing consultants as professionals is to identify the needs for the beneficiary community and the search for solutions, resources, technical training, assistance and political support during the current period of enabling. Van Wyk (2009:211) confirms that what these authors state is one of the principal themes in the evolution of urban policies in developing countries.

4.2.10 THE FINANCIAL MANAGER

The role of the financial managers as housing management professionals is to identify the cost of the projects and to control the cost flow through every stage of the entire project. The financial manager coordinates with the HMPs regarding the project cost and the change in costs as the project specifications changes.

4.2.11 THE HMP (HOUSING MANAGEMENT PROFESSIONALS) AS A TEAM

The Housing Management Professional (HMP) team will be held accountable for managing housing programmes and projects, and developing housing policies and strategies. This team would have to most importantly guarantee that housing programmes and projects are planned, designed, constructed, managed and maintained efficiently and effectively. Development programmes cross over departmental boundaries and this normally involves managers with different social backgrounds, and therefore team-building skills should be developed also among the HMP team (Van Wyk, 2009:174).

4.2.12 SUMMARY

Housing Management Professionals should fulfil the roles of business managers in the private, public and non-government sectors:

- Private sector housing is managed on business principles because of their private sector nature.
- Business management principles and practices should be applied in the public sector, because the housing departments have to be managed efficiently and effectively.

- Non-government sectors also need to be efficient and effective and require housing managers because they are accountable to their donor agencies.

An educated business management background would help HMPs in all sub-sectors to fulfil their roles (Van Wyk, 2009:183). Van Wyk (2009:188) indicated that HMPs should be able to plan for, harness, develop and manage resources in such a manner that the best performance can be achieved for the benefit of households, communities and society.

It is important that the Housing Project Manager understands these different HMP roles to communicate most efficiently and increase productivity. In order to play the role of a meaningful link between the HMPs and the design and construction professional, it is important for the HPM to understand and provide input into the HMP functions.

4.3 BUILT ENVIRONMENT PROFESSIONALS (THE PROFESSIONAL TEAM)

This section provides an insight in the roles and responsibilities of the professional role-players assigned to a construction project. Development managers (including the Project Manager) must manage the internal activities of their organization and be involved in the external environment that is relevant to the project (Van Wyk, 2009:192). This implies that the project manager must manage the project between the professional team as well as the role-players external to this team.

“In the case of buildings when a project manager is not appointed, the architect or quantity surveyor, or for a civil engineering project the civil engineer, put together the entire professional team.” (Hauptfleisch & Sigle, 2007). It is clear that in this case the responsibilities of the project manager are now placed on the civil engineer. For civil engineering projects the project manager must require civil engineering skill sets.

These role-players listed below are referred to as the “professional team” in the construction of a project. The following descriptions of the professional implementation teams are provided by Hauptfleisch & Sigle (2007).

4.3.1 ARCHITECT

The role of the architect is to design the infrastructure within the specifications of the National Building Regulations and the bylaws of the Local Government. He documents and supervises the construction of the infrastructure, so it will meet the requirements of the employer. The architect provides the following services:

- Review and description of project
- Draft design / conceptual design
- Design development
- Technical documentation and approval
- Contract administration and supervision

The architect is also capable of doing the following general services:

- Inspection of work for which he is not the architect
- Valuation of buildings (although this is more often done by the quantity surveyor)
- To act as expert witness or the preparation of evidence in a lawsuit
- To act as an arbitrator
- Adjudicating architectural competitions

The architect normally has the three functions of design, management and supervising for the client as his primary agent.

4.3.2 LANDSCAPE ARCHITECT

“Landscape architecture may be defined as the science, technique and art of ecological, functional and aesthetic planning and design of outdoor and open space for human utilisation, environmental conservation and rehabilitation.” (Hauptfleisch & Sigle, 2007)

The landscape architect provides the following services:

- Submission of master plan
- Preparing documentation for execution of work
- Supervise execution on site on behalf of the employer
- Inspect quality of work by the contractor before issuing payment

The landscape architect is also capable of doing the several general services:

- Ecological analysis, planning and rehabilitation
- Landscape master plan or long-term development plan

4.3.3 QUANTITY SURVEYOR

The role of the quantity surveyor is a project cost consultant. He should provide advice regarding the costs of the project, the size and standard of the project, tender procedures and contractual arrangements. He should also provide the budget and work together with the design team to ensure the project can be executed within this budget. The quantity surveyor should also prepare the tender document which includes the arrangement of a contract and the bill of quantities. The quantity surveyor provides the following services:

- Draft design stage: preparation of cost estimates
- Documentation stage: preparation of bill of quantities, cost plan, estimates and budgets.
- Contract administration stage: preparation of monthly payment certificates, price fluctuations in term of the contract price adjustment provisions.
- Final account stage: preparation of final account.
- More specific services include:
 - Advice regarding costs
 - Cost planning and control
 - Tender procedure
 - Tender documents
 - Type of contract
 - Evaluation of work in process
 - Cost report

The quantity surveyor is also capable of doing the following general services:

- Cost planning, cost control and cost analysis for specific tasks
- Negotiations regarding cost rates
- Control over lump sum contracts

- Acting as primary agent
- Interpretation of construction contracts
- To act as an expert witness or arbitrator

Another important role of the quantity surveyor is to co-operate with the consulting engineers, architect and the other professionals in the team. This is to ensure that the financial provision of the contracts is understood.

4.3.4 LAND SURVEYOR

The role of land surveyors is measuring both natural and man-made features. This is done to create maps and determine boundaries. Land surveyors are fundamental to all planning, development and construction work. There are five fields of land surveying:

- Cadastral surveying
- Engineering and topographical surveying
- Hydrographical, geodesy and geodetic surveying
- Photogrammetry
- Cartography and mapping

4.3.5 CONSULTING ENGINEERS

The role of the consulting engineers is to design engineering works and manage the execution thereof. There are several consulting engineering specialisations such as Civil, Electrical, Mechanical, Structural, etc... The consulting engineer provides the following services:

- Study stage:
 - Evaluation of the project
 - Undertake necessary studies
- Design stage:
 - Designing the project
 - Advising the required contractors and suppliers
 - Obtaining tenders
- Construction stage:

- Planning, programming and co-ordination of contractors
- Monitoring and inspection during construction
- Approvement of payments
- Certifying the completion of work

The civil engineering works include the construction of catchments, railways, water supply systems, docks, tunnels, roads, sewerage, etc...

The structural engineering works include excavations and foundations, reinforced concrete or steel structures and other forms of building construction.

When considering mechanical and electrical engineering in a construction team, the mechanical services include air conditioning, lifts and other mechanical aspects and the electrical services include lighting and electrical installations.

4.3.6 TOWN AND REGIONAL PLANNER

The role of the town and regional planner should plan in order that the town, city and regional planning functions work efficiently. The town and regional planner takes into account the social, economic, geological, industrial, architectural and geographical factors. He also acts as a link between the professional groups and the private developers. The role of the town and regional planner is to further human development and environmental sustainability in several fields which include:

- *“the delimitation, regulating and management of land uses;*
- *the organization of service infrastructure, utilities, facilities and housing for human settlements; and*
- *the co-ordination and integration of social, economic and physical sectors, which comprise human settlements.”* (Planning Profession Bill, 2001:4).

The services required from the town and regional planner are to direct the project in the most optimal pattern determined. He must create a logical coherence between the involved towns and cities and prepare the most suitable development programme for the area. Hauptfleisch & Sigle (2007) identified that *“this is done by drawing up plans which indicate the location of*

schools, houses, shops, churches, hospitals, sports grounds, etc., or in the case of regional planning, towns, communication systems, etc.”

4.3.7 PROPERTY VALUER

The role of the property valuer is to determine the value of the fixed property and rights thereto. A property valuer should possess the required professional qualities and capabilities, and have the understanding and knowledge to determine these values. The property valuer should also be able to determine the value for purchase, tax and sale for insurance purposes.

4.3.8 CONSTRUCTION MANAGER

The role of the construction manager in South Africa is usually part of the main contractor's team, where he is responsible for the execution of the construction works. The construction manager is normally a highly qualified production expert and has qualifications in construction management or civil engineering. There are several bodies describing the role of a construction manager, one of which is the Chartered Institute of Building of Britain. According to the South African Council for Project and Construction Management Professionals (SACPCMP), the construction managers manage the physical construction developments within the built environment. This includes the co-ordination administration and management of resources, whereas the construction project managers manage projects within the built environment from beginning to completion, including the management of related professional services (Van Wyk, 2009:413).

4.3.9 PROJECT MANAGER

The role of the project manager is one of the main focuses of the study. The project manager acts as the principal agent for the client on a construction project, but also links with the housing management professionals. The project manager can originate from any built environment profession, and sometimes from another completely different profession.

The project manager must be goal orientated and provide the leadership to ensure that the cost, time and quality requirements of the project are satisfied. A more thorough discussion regarding the role of the project manager is done in chapter 8.

4.3.10 CLERK OF WORKS, RESIDENT ENGINEER AND INSPECTORS

These role-players are not part of the professional team:

- Clerk of works: his role is to be constantly on site and keep record of everything that can assist the professional team in doing their jobs and the principal agent in managing the project. These types of records include things such as quality variations, progress on site, the labourers employed, weather and material delivered.
- Resident engineer: his role is similar to that of the clerk of works, but he represents the consulting engineer on site. The resident engineer is usually employed by the consulting engineer. It is typically for resident engineers to be young, spending their early careers on site to obtain practical experience.
- Inspectors: they are appointed by the local authorities to inspect the specific stages of the construction of the building. More specialized inspectors are assigned to inspect the project to reassure the bondholders that the specifications are met and the interim payment certificates are accurate.

4.3.11 OTHER CONSULTANTS

Some construction projects require external specialist consultants for detailed advice concerning specific aspects of the project. They are normally required when less common buildings are constructed such as hospitals, abattoirs, etc.

4.3.12 SUMMARY

The architect and/or engineers design the facility to the specific requirements for the employer. The quantity surveyor contributes during the design stage to confirm that the design meets the financial requirements. *“The project manager, architect and/or engineers and the quantity surveyor work together to find the most economical solution that will satisfy the client’s requirements.”* (Hauptfleisch & Sigle, 2007)

The roles of the most relevant Built Environment Professions, as described above are summarized in the following table.

Table 14: A Summary of the roles of Built Environment Professionals (Hauptfleisch & Sigle, 2007; Van Wyk, 2009)

PROFESSIONALS	ROLES
ARCHITECTS	<u>To design buildings</u> within the framework of the national building bylaws and the local town planning restrictions and <u>to document and supervise the erection thereof</u> in order that it will meet the requirements of the employer
LANDSCAPE ARCHITECTS	Practise the science, techniques and art of ecological, functional and aesthetic planning and design of outdoor and open spaces for human utilization and for environmental conservation and rehabilitation
QUANTITY SURVEYORS	A <u>construction cost advisor</u> who collaborates with the design team regarding the design within budget; <u>prepares tender documents</u> ; <u>exercises control over costs during construction</u> ; <u>co-operates with the Engineer and the Architect</u> regarding the financial provisions of the contract; <u>protects the interests of the employer and ensure that the contractor gets paid</u>
CONSULTING ENGINEERS	Consulting engineers <u>offer advice on engineering matters</u> to the public as well as design engineer works and <u>administer their construction</u>
LAND SURVEYORS	Practise the science of the measurement of both natural and man-made features on the earth's surface, for the purpose of making maps and determining boundaries
TOWN AND REGIONAL PLANNER	Town and regional planners <u>investigate and plan</u> the most effective way in which <u>town, city and regional</u> planning can be done. A town planner is <u>an important link</u> between professional groups, and the public and private developers

PROFESSIONALS	ROLES
CONSTRUCTION ENGINEERS	<u>Manage the physical construction</u> process within the built environment and includes the coordination administration and management of resources (SACPCMP, 2004)
CONSTRUCTION PROJECT MANAGERS	<u>Manage projects</u> within the built environment from conception to completion, including the management of related professional services (SACPCMP, 2004)
VALUERS	<u>Determine the market value of properties</u>
CLERK OF WORKS, RESIDENT ENGINEERS AND INSPECTORS	Essentially inspect the construction to ensure that the work is done according to specifications and according to sound construction practices, or <u>quality assurance</u>

4.4 CONCLUSION

It is important that the built environment professionals as well as the HMPs understand the roles and responsibilities of each other within housing project. The Housing Project Manager provides the communication between these two groups and should understand the importance of each individual role and their technical skill sets. It is therefore clear that the Housing Project Manager is not only a construction manager, but plays an important part during conceptual phase with input to the housing management professionals.

These descriptions of the Housing Management Professionals and Built Environment Professions clearly reveal no direct clash between the roles of these two groups. Therefore it can be concluded that the Housing Project Manager has a unique role to fulfil in the housing sector.

Table 15: Identified responsibilities in Chapter 4

Civil Engineering Responsibilities	Housing Management Responsibilities
1. The roles and responsibilities of the Built Environment professional team	1. The roles and responsibilities of the Housing Management Professionals 2. The location of the Housing Project Manager within Housing Projects 3. Communication between different role players

Table 15 identifies several education and training requirements obtained from this chapter for Housing Project Managers. This chapter mainly identifies the different roles players directly linked to the Housing Project Manager.

CHAPTER FIVE

INTEGRATED DEVELOPMENT PLANNING (IDP), DESIGN AND SERVICE RESPONSIBILITIES FOR HOUSING PROJECTS

5.1 INTRODUCTION

This chapter focuses on the planning responsibilities regarding the development of housing projects. The Housing Project Manager is not directly involved in the planning phase of housing projects; however he should understand the impact of the key discussions made within this phase.

Chapter 5.2 provides a brief discussion regarding the Integrated Development Plan (IDP) initiated by the government to improve the living condition of South African citizens.

Chapter 5.3 provides a brief discussion regarding the design and service responsibilities that enable a formal settlement to be sustainable. This includes several features such as education, water and sanitation, roads and transport systems, etc.

The following five steps are identified in the Housing Development Options (Development Options: a Guide for Municipalities, n.d.) and will assist the municipality to plan for housing projects in their judicial area:

1. Identify the current and future housing need/demand in your community.
2. Identify & consult with the stakeholders.
3. Develop a housing plan.
4. Incorporate the Housing Chapter in the IDP and get council approval.
5. Implementation of the Housing Chapter of the IDP.

After these five steps have been completed and approved, only then can the implementation of the different individual housing projects originate. The following chapter incorporates housing in the IDP as seen in Figure 16 and Figure 17.

The flow of this chapter is provided in Figure 15.

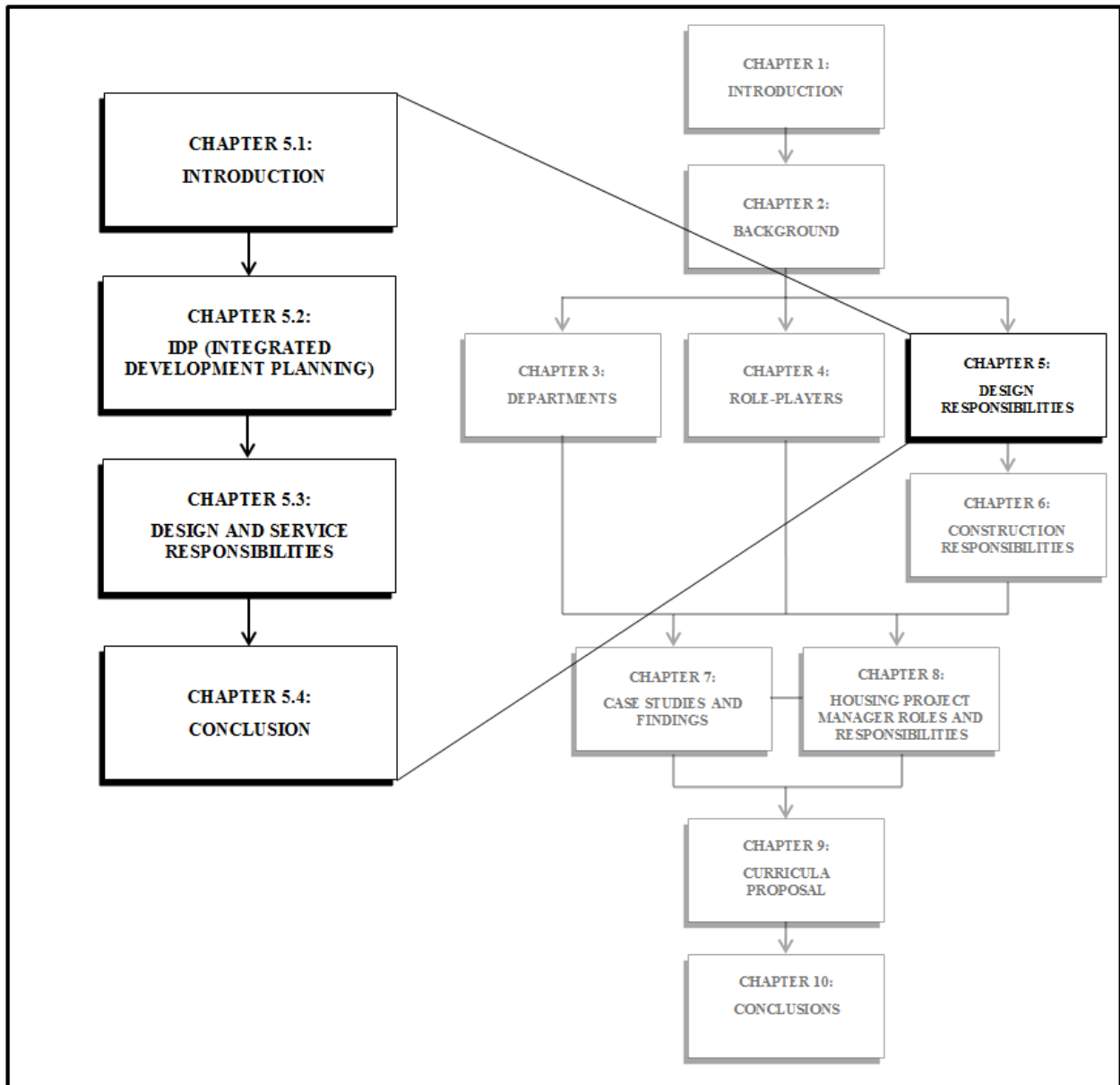


Figure 15: Overview of Chapter 5

5.2 IDP (INTEGRATED DEVELOPMENT PLAN)

This sub chapter provides a brief discussion regarding the Integrated Development Plan in the South African context.

“It is legally required from South African developmental local government to adopt a strategic, creative and integrated approach to local governance to address development

challenges and to promote sustainable development.”(Van der Waldt, *et al.*, (2007:94). This involves finding organizations that include all the required role-players that contribute to the development of an area, in order that local government can achieve their responsibilities in positively changing the quality of life of the citizens they serve. These role players include several state departments, the private sector and involved communities. (Coetzee 2000:12)

“Integrated development planning lies at the centre of this new system of developmental local government, and represents the driving force for making municipalities more strategic, inclusive, responsive and performance-driven.”(Patel 2001:2 **in** Van der Waldt, *et al.*, 2007:94)

There are several explanations and descriptions for the IDP. The Provincial and Local Government describe integrated development planning as a process in which a five-year strategic development plan is prepared by the municipalities (IDP Guide Pack, 2001). The Development Bank of Southern Africa and the National Business Initiative (DBSA & NBI) (2000:5) describe integrated development planning as a management tool that allows municipalities to take a comprehensive strategic view of their development requirements. These two descriptions include several processes which should arrive at decisions on issues such as *“municipal budgets, land management, promotion of local economic development and institutional transformation.”*(Van der Waldt, *et al.*, (2007)

The two themes, identified according to Van der Waldt, *et al.*, (2007:99) in the IDP are: *“firstly, the importance of promoting grassroots involvement in a democratic planning process; and secondly, that the responsibilities of municipalities, as the level of government closest to the people, should be expanded from the dominant role of service providers to becoming key players in the development process.”*

Van der Walt, *et al.*, (2007) state that the contents of an IDP within the municipality should reflect the long term development vision and the institutional transformation. The municipality should bring into line with the plans set by other spheres of government. The IDP also allows the municipality to set and define their objectives, priorities and framework, as well as to reflect their operational strategies, key performance indicators and performance target, etc. (Van der Waldt, *et al.*, 2007).

One of the characteristics of an IDP is to focus on the implementation, whereas the IDP is only useful if it contribute to municipal management in improving and fast-tracking delivery and development. Rauch (Van der Waldt, *et al.*, 2007:101) points out that an implementation-oriented process has several requirements, such as the requirements of the project proposal have to be exact with regard to the quantitative targets, quality, scheduling, costs and responsible implementation agencies. A relationship between the budgeting process and the planning is required, as well as an agreement among all role-players and stakeholders regarding the project plans, strategies must be reached to avoid delays in implementation process.

Van der Waldt, *et al.*, (2007:102-103) identify the benefits of IDP. The IDP is an instrument to fast-track delivery, provides smooth communication and is an agent of transformation. The IDP also works as a tool to reduce poverty and provides intensive budgeting.

There are five components of an IDP process, which are identified by Van der Waldt, *et al.*, (2007:103 - 104) and Feldman, Royston & Monty, (n.d.:63 -64) as shown in Figure 16 and Figure 17. Figure 16 shows the overview of an IDP process, whereas Figure 17 includes the Housing contribution in the IDP process.

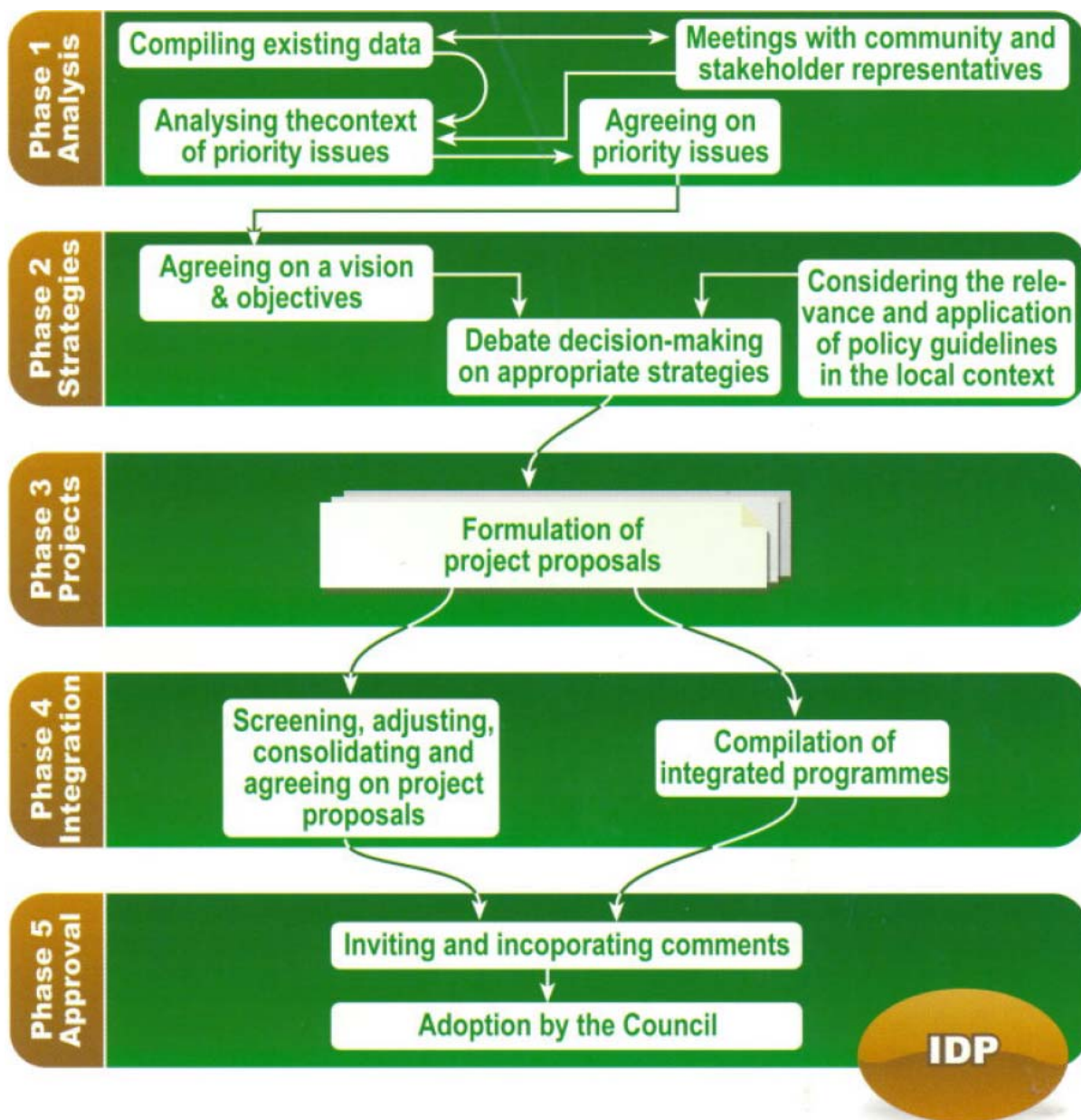


Figure 16: Overview of the Integrated Development Planning process (Feldman, Royston & Monty, n.d.)

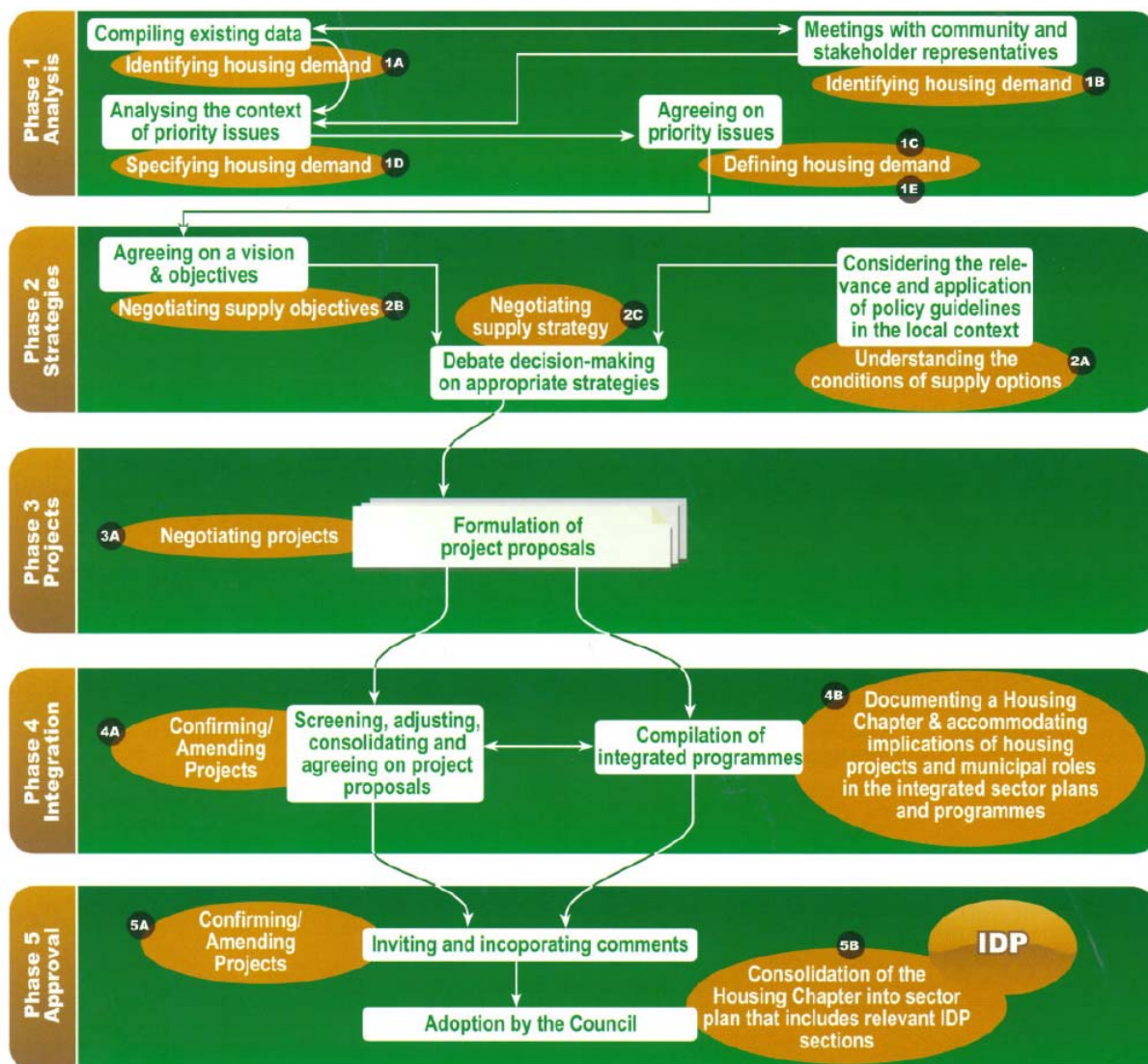


Figure 17: “The Housing Voice” in the IDP process (Development Work) (Feldman, Royston & Monty, n.d.)

5.3 DESIGNS AND SERVICE RESPONSIBILITIES

This section discusses the different aspects and tasks that need to be taken into account when developing a new sustainable settlement. Each of these features has a unique function/role it plays as creating a sustainable environment for the involved communities. There is no specific reason for the order in which these aspects and tasks are listed, and that each is important to consider when designing housing projects.

Housing projects should not only be the design and construction of houses, but should include other amenities such as schools, community centres, health centres and business centres. The design of housing projects should include multiple facilities that benefit the community, because the design of a housing project includes the design of the community's future. It is not just the design of houses but the design of a micro town and should be able to function as a town (civil works, services, electrification).

“Critical amenities such as libraries, police stations, schools, shopping malls, transport interchange nodes and clinics are practically a walking distance away. Many of our inner city initiatives enhance neighbourhoods that already exist.” (Sexwale, 2011b)

Coetzee, Graaff, Hendricks, & Wood (Van Wyk, 2009:193) state: *“Development does not only imply the satisfaction of basic needs, but also the right to live a meaningful life. Development is therefore based on human well-being...”*

The following features regarding the development of a new housing settlement should always be taken into consideration.

5.3.1 HOUSING UNIT DESIGN SPECIFICATIONS

There are many different design specifications when constructing low-cost housing units. The housing project could consist of many individual housing units or of several flat blocks for example, the CSIR (Focus on low-income housing, 2010) provided some specifics for the design of low-cost housing units.

- “Same size (40 m²), but optimal design – bathroom and kitchen spaces
- Modular, design-to-fit, like Lego set

- Can be extended easily by home owners
- No foundations – continuous foundation slab based on ultrathin concrete road technology
- One ton less concrete used to construct one house – reduction of CO₂ emissions of almost one ton per house
- Roof assembly – reinforced roof ring beam further reduces cracking
- Prefabricated plumbing – waste outlet manifold installed on site
- Improved thermal performance – insulation material doubles up as ceiling
- Additional features: solar geyser, photo-voltaic panel for LED lights inside, rainwater harvesting tank”

These design specifications differ from project to project, depending on the budget of the project, size of the available area and the amount of members in the community.

5.3.2 WATER SERVICES (CLEAN & STORM WATER), ELECTRICITY AND ROADS

Before allowing any housing project to progress to the construction of the new settlement, several other basic services are required. This concerns mostly infrastructure services apart from the housing units. These services include the inspection of additional water (clean and storm) systems, electrical services and roads if required, to ensure these services are sufficient for the top structures.

Safe drinking water and acceptable sanitation services are essential to human health and to provide a sustainable human settlement. Safe drinking water in human settlements has several benefits such as increase well-being, privacy, personal dignity and safety. (UN – HABITAT, 2009)

“Regarding the improvement of access to basic services, we play a supportive role to the department of Cooperative Governance and Traditional Affairs, in the provision of basic services such as water, electricity, refuse removal and sanitation.” (Sexwale, 2011b).

Sexwale (2011b) says: of all the weaknesses, bulk infrastructure keeps creating a reason for concern. If the following infrastructure elements are not in place and advance enough it could pose a major risk to human settlement projects:

- Mega water treatment plants.
- Major electrical power stations
- Sewerage works for sanitation
- Extensive storm water drainage system, and
- Road construction including street lights. (Sexwale, 2011b)

5.3.3 SCHOOLS, EDUCATION AND PUBLIC AREAS

Schools, educational centres and public areas are essential to the bonding and educational future of the citizens in the community, in order to establish settlement as a formal settlement. *“Children may not have enough books at home but still have to do homework. Is there a library nearby where the children can study? Is there a park where an elderly person can feel safe to walk out into the streets?”* (Housing, 2011)

The following facilities should be included in the original design of the new settlement if the settlement is not within close distance from the facilities:

- Schools and libraries (to educate the youth)
- Educational/training facilities (to educate the citizens in order to keep the settlement sustainable)
- Public areas (this includes sport grounds for the schools, public parks, churches, etc.)

The development plans go further than providing a roof over the heads of the citizens in need of better shelter. *“Where people live must be where they can learn and (have) leisure,”* Sexwale says: *“Where people stay must be where they can play and pray.”*, *“The department’s approach goes beyond building houses and aims to build proper suburbs, villages and towns.”* (Housing, 2011)

In low income human settlements the public facilities could be combined to minimize cost and still provide the same quality education. The primary schools could also be used as a high

school, community hall, adult learning centre, library and even a playground and community park. (Guidelines for Human Settlement Planning and Design – volume 1, 2000:199-201)

5.3.4 HOSPITAL, SECURITY AND FOOD SHOPS

When the government engages in a housing project, one of the major concerns of the settlements is the health and safety of the citizens. For any settlement (formal, informal, urban, rural), the service required is proper health and safety facilities. This includes:

- Health facilities/services (hospitals, medical care centres, pharmacies, etc.)
- Safety facilities/services (police stations, fire stations, night watch, etc.)
- Food markets (part of providing the community with proper health facilities includes providing them with proper diet plan options)

5.3.5 EMPLOYMENT OPPORTUNITIES AND TRANSPORT SYSTEMS

When deciding on the location of the new human settlement, several features of the locations need to be taken into account. The location determines if the human settlement will stay sustainable. The new settlement should be close to employment opportunities as well as close to the existing employment of numerous citizens. This implies that the location should be near cities and towns and if not, transport systems should be set in service so the citizens could reach their job locations. The transport systems are not only for transport to the job locations, but could be used for the transport to schools or public locations.

The new human settlement needs to be close to city centres where there are economic opportunities for the community citizens. *“If we are going to make sustainable human settlements for the majority of our country, we have to imagine the house as more than just a unit,”* Makeka says: *“It has to be about the context which it is in and about making the right choices to allow the people in those areas to have enough opportunities.”* (Housing, 2011)

Some of the objectives of public transport systems are to reduce the dependence on cars and still provide access to facilities for all the users, and to provide opportunity for locally based business and employment. Public transport is essential to urban human settlements because of not being able to afford private transport. . (Guidelines for Human Settlement Planning and Design – volume 1, 2000: 88).

5.3.6 MAINTENANCE AFTER CONSTRUCTION

The servicing and maintenance of the housing units after construction is the responsibility of the municipality. The communities placed in the new settlement do not earn enough to provide for suitable maintenance on the housing units. The maintenance after construction should be set in place to keep the human settlement sustainable and appropriate for further construction in the future.

5.4. CONCLUSION

As already mentioned, the Housing Project Manager should understand and contribute to the key decisions made within the planning phase. The key decisions made within the planning phase contribute significantly to the quality and cost of the project.

The design and service responsibilities are all planned at the IDP stage of housing projects. The Housing Project Manager should understand the full impact of each of these design and service responsibilities. He does not participate in the discussions regarding these responsibilities, but manages the construction of these facilities that provide these required services. The Housing Project Manager should understand the complete picture and how these design and service responsibilities work together to create a sustainable human settlement.

Table 16: Identified responsibilities in Chapter 5

Civil Engineering Responsibilities	Housing Management Responsibilities
<ol style="list-style-type: none"> 1. The impact of the different Design and Service responsibilities 2. Maintenance specifications 	<ol style="list-style-type: none"> 1. The Integrated Development Planning (IDP) process regarding Housing 2. Considering all the different Design and Service responsibilities 3. The specific details of the Design and Service responsibilities (Technical housing)

Table 16 identifies several education and training requirements gained from reviewing this chapter. These responsibilities would benefit Civil Engineers towards understanding the role of the Housing Project Manager. The Housing Project Manager is not directly involved with the IDP but should understand the IDP process.

CHAPTER SIX

THE IMPLEMENTATION PHASE OF HOUSING PROJECTS

6.1 INTRODUCTION

The focus of this chapter is to identify the processes used by the Housing Project Manager. The emphasis is on the implementation process of the housing development projects. This incorporates the responsibilities of the role players involved in the construction of the housing units, as well as the specific details that create a sustainable settlement.

In chapter 6.2 the implementation phases of the following three housing programmes are discussed as well as the role players and their responsibilities regarding the construction phase of the project:

- Social and Rental Housing Programme – Community Residential Units
- Integrated Housing Programme – Integrated Residential Development Programme
- Rural Housing Programme – Rural Subsidy: Informal Land Rights

One implementation process of each of the three interventional categories is chosen to discuss in depth, as indicated in Table 18. These three programmes are chosen because of the availability of the information regarding the implementation phase.

The flow of this chapter is provided in Figure 18.

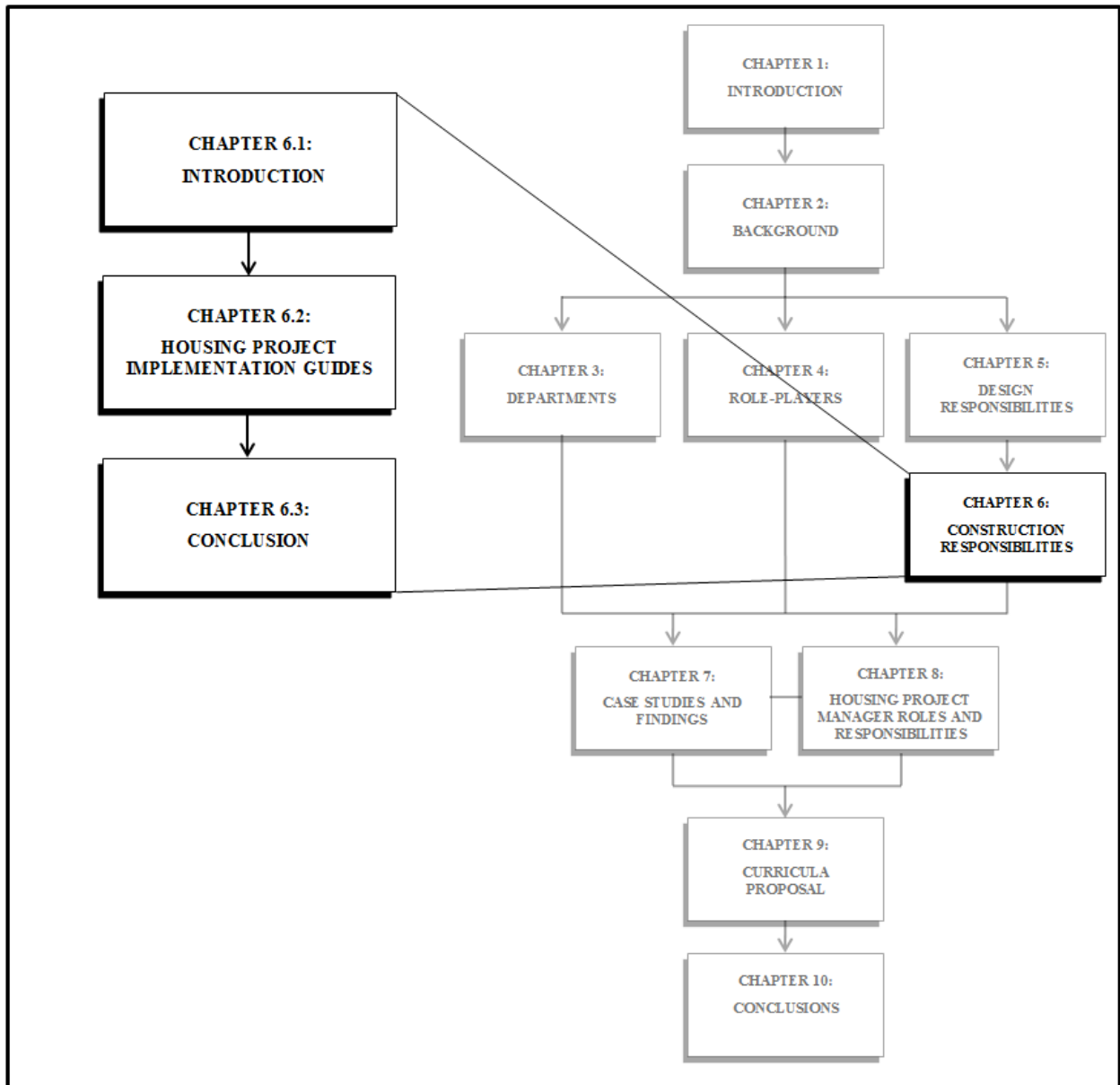


Figure 18: Overview of Chapter 6

When discussing housing development projects, it is important to highlight the location of the implementation phase within the entire project structure before proceeding with too much depth into the implementation phase. The location of the implementation phase can be seen in Table 12. The five stages of any project are provided as well as the roles of the key role players regarding housing.

The five stages of any project (not only housing projects) according to the Project Management Body of Knowledge (2008) are:

- Stage 1: Initiating
- Stage 2: Planning
- Stage 3: Executing
- Stage 4: Monitoring and Controlling
- Stage 5: Closing

These five stages are summarized to the project disruptions in Figure 19, Figure 20 and Table 17.

The five stages shown in Table 17 describe the roles of the key role players in housing development projects.

Table 17: Summary of the roles of key role players in the five stages of a housing project (Van Wyk, 2009)

	STAGE 1 NEEDS ANALYSIS	STAGE 2 PLANNING AND BUDGETING	STAGE 3 DESIGN	STAGE 4 IMPLEMEN- TATION	STAGE 5 MONITORING
NATIONAL GOVERNMENT	Analyse housing need Determine provincial allocation	Monitor progress	Monitor progress	Monitor progress	Monitor progress
PROVINCIAL GOVERNMENT	Analyse housing need Determine sub-regional allocation	Evaluate project application Approve project Allocate funds	Pay progress payment 1 and 2 Approve individual subsidies	Pay progress payment 3 and 4	Pay progress payment 5
LOCAL GOVERNMENT / COMMUNITY	Identify housing needs Agree on identified needs	Obtain land availability agreement	Approve engineering design and town planning Approve payments 1 and 2	Approve the installation of services Approve payment 3	Inspect building Maintain services / service delivery and collect payment
IMPLEMENTER / PROJECT LEVEL	Conduct social survey	Prepare project proposal	Submit engineering design and town planning Pay survey fees Apply for payments 1 and 2 Individual applies for progress payment 4	Install services Register transfer Apply for progress payments 3 and 4	Complete top structure Apply for progress payment 5

By observing Table 17, it is clear that the implementation of the housing projects is mainly managed at local government level together with the implementer/ project level (construction and consulting firms/private sector). When observing Figure 19 and Figure 20 on the project life cycle, it can be seen that most of the effort and input is directed towards the execution phase of a project. This also applies to the project manager.

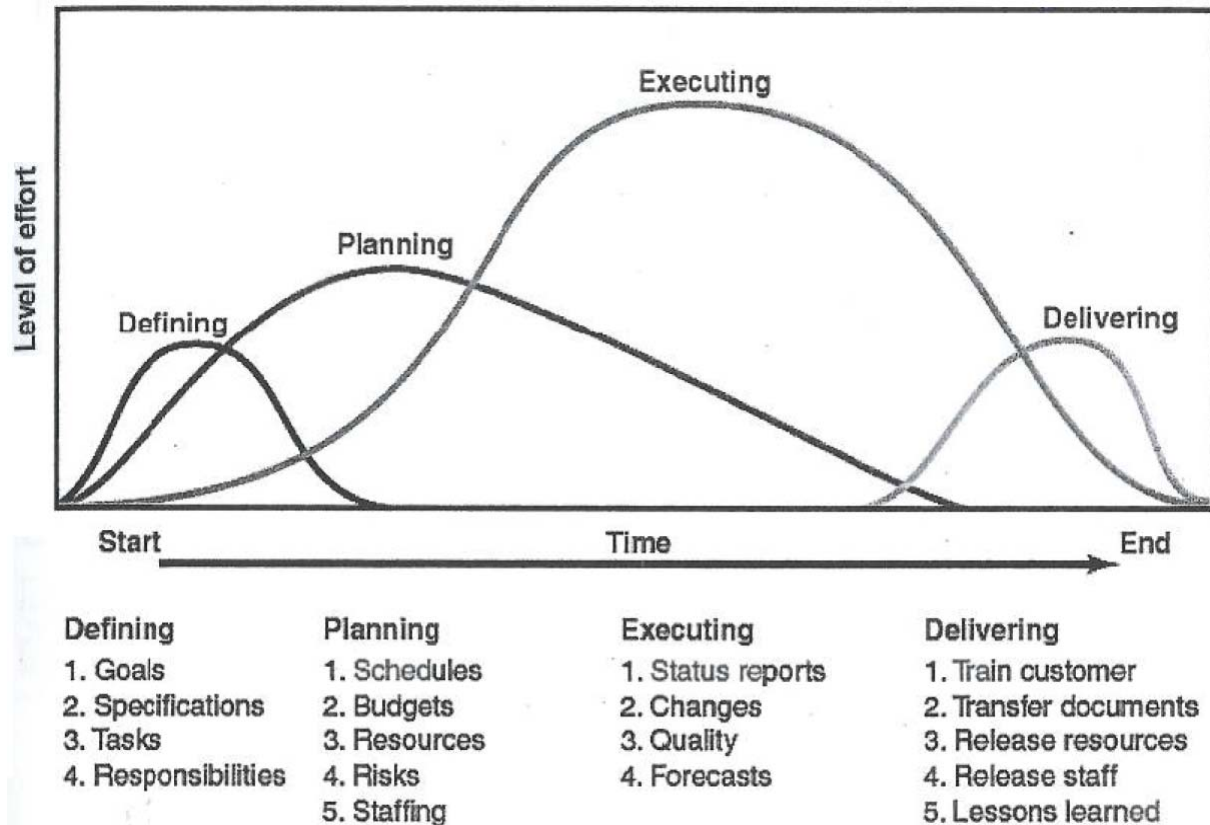


Figure 19: Level of effort regarding the stages of a project (Gray & Larson, 2006)

From the four stages shown in Figure 19, Gray & Larson (2006) explains the execution stage as: “A major portion of the project work takes place – both physical and mental.” It is during this phase that the physical product is produced (the infrastructure – housing units, roads, centres, etc), through controlling the time, cost, and design specifications.

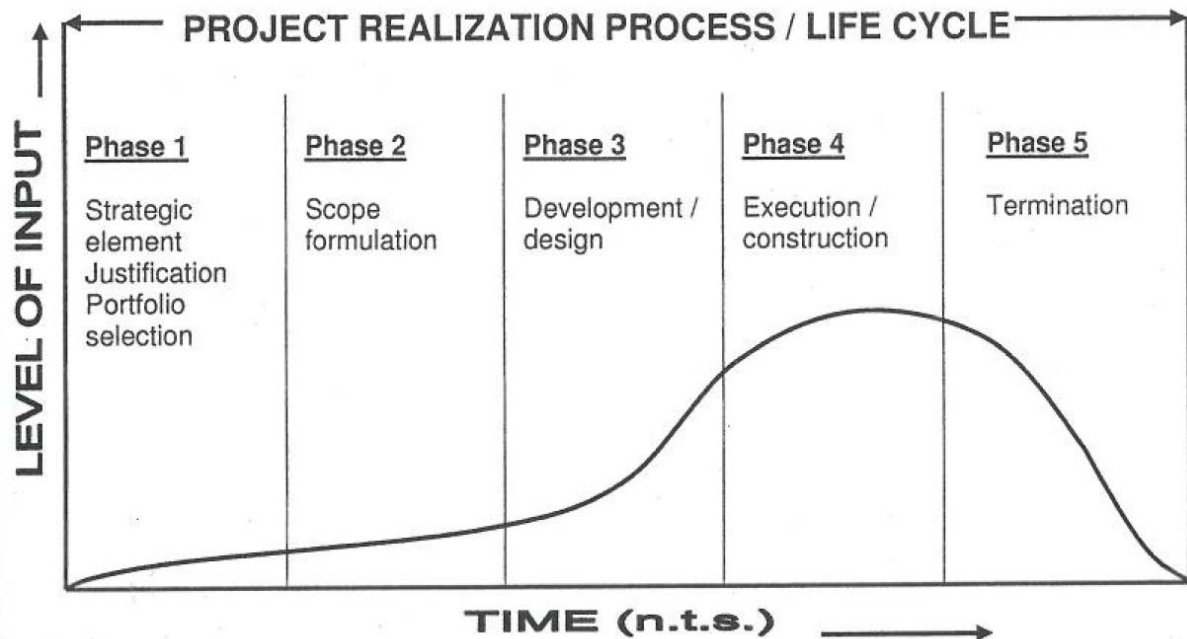


Figure 20: Life cycle of a project (Brown 2006:11)

Through observing chapter 4 and identifying the impact of the execution phase of a project, the conclusion can be derived that the project manager located at the execution phase of housing projects has enormous responsibilities to ensure the success of housing projects.

6.2 HOUSING PROJECT IMPLEMENTATION MODELS

This sub-chapter focuses on the implementation phase of housing development project. This phase primarily consists of the execution of the entire housing project to enable a sustainable environment. The implementation refers only to the design and construction/execution of the infrastructure.

There are various stages when planning for the development of any project. The scheme for building construction has to go through several stages identified by Jain (1992:98). These stages starts with the programming, surveying and finalising the requirements for design and planning, secondly the concrete planning and design of the project, thirdly the structural design, specifications, quantity, services and material management, and finally the execution of the project.

Jain (1992:99) also identifies that the design stage of construction projects is most crucial for achieving efficiency and minimizing costs. This is achieved through the optimal use of land

and building materials, standardising the dimensions and components of the design of the buildings, new techniques of construction and improving the management of projects.

Low cost is achieved through correct planning, conceptual design and detail design. Once implementation starts, the costs need to be controlled by preventing changes and additional requests. Reducing of construction cost is beneficial for the national economy. This makes it possible to increase production of housing projects without affecting the allocations to the housing sector (Jain 1992).

It is crucial that the correct subsidy programme be chosen for each specific project. The programme would be initiated at the IDP stage of the project as seen on Figure 17 (phase 2: analysis)

There are several subsidy programmes available and only some of these programmes will be discussed in this chapter. The selection of subsidy programmes is shown in Table 18, and the specific programmes discussed in this chapter are also indicated in Table 18.

First the Community Residential Unit Programme will be discussed in chapter 6.2.1 and then both the Integrated Residential Development Programme together with the Rural Subsidy: Informal Land Rights Programme will be discussed in chapter 6.2.2. The motivation for discussing the Integrated Residential Development programme and Rural Subsidy: Informal Land Rights programme in one chapter is because of the similarities regarding the implementation process.

Table 18: Housing programmes (Community Residential Unit – Implementation Delivery Chain, 2008)

INTERVENTION CATEGORY	HOUSING PROGRAMME
Social and Rental Housing Programme	Institutional Subsidies
	Social Housing
	(6.2.1) Community Residential Units
Incremental Housing Programme	Emergency Housing Assistance
	People Housing Process
	Informal Settlement Upgrading
	Consolidation Subsidies
	(6.2.2) Integrated Residential Development Programme
Rural Housing Programme	(6.2.2) Rural Subsidy: Informal Land Rights

6.2.1 COMMUNITY RESIDENTIAL UNIT

The Community Residential Unit Implementation Delivery Chain (2008) was composed and published only three years ago. The Community Residential Units (CRU) programme is assembled by the National Department of Housing (NDoH) in South Africa. The general aim of the programme is the delivery of stable rental tenure for lower income persons (with an income of between R800 and R3, 500 per month). The CRU guide is a fairly new programme whose operation cuts across all three spheres of government. This guide introduces the CRU programme and sets out the principles, procedures and practices that are essential to execute CRU projects and splits these into the actions required from each of the three spheres of government as well as the external role players. (Community Residential Unit Implementation Delivery Chain, 2008:1)

The choice of accommodation is very limited for most low income families in South Africa. The available housing market value in formal settlements does not match the low income households, for the costs of these houses are too high. Another limitation due to the poor transport systems is the location choices available to develop a formal settlement. (Community Residential Unit Implementation Delivery Chain, 2008:1)

As mentioned in chapter 2, due to high migration into urban areas, from both South African citizens as well as neighbouring states outside South Africa, there is a significant increase in the housing need. Numerous households in urban areas rent out backyard shacks or live in informal settlements. This leads to overcrowded communities, poor health and undesirable environmental impacts. (Community Residential Unit Implementation Delivery Chain, 2008:3)

The key role players within CRU Programmes as identified in the Community Residential Unit Implementation Delivery Chain (2008) are:

- National Department of Housing (NDoH)
- Provincial Departments of Housing (PDoH)
- Municipalities
- Provincial Task Teams

The participation from the community happens at all stages of the CRU process. It is important for the programme that all existing residents are involved in the process together with the key role players and other key stakeholder groups. At all the stages in the process, whether it is the implementation process with external contractors or consultants, proper community discussions must be incorporated into the programme. (Community Residential Unit Implementation Delivery Chain, 2008:9)

Participation of the community is essential for proper decision making. The participation of communities in the design and implementation phases of the project allows for a greater chance of project success, as it would incorporate the needs of the community. This creates an understanding of the shared responsibilities to maintain the good quality of the units, thus generating a sense of shared ownership and decision making. (Community Residential Unit Implementation Delivery Chain, 2008:10)

Each phase of the guide is planned out in a process flow diagram which outlines the activities required, the organizations responsible for each of the activities and the interrelations between these activities as seen on Table 20. Although the main responsibilities of the Housing Project Manager are with the implementation phase of housing projects, this is not the only phase in which he has responsibilities. He plays a pivotal role in the phases of development, feasibility and preparation. Table 19 shows an overview of the six phases implemented in CRU projects.

Table 19: The six phases implemented in CRU projects (Community Residential Unit Implementation Delivery Chain, 2008)

PHASES	OUTPUTS	RESPONSIBILITIES
<p>1. CRU Programme Establishment</p>	<ul style="list-style-type: none"> • Engagement of municipalities with provision in identification of stock and prioritised municipal CRU projects • Information from existing • Occupants to consolidate data 	<ul style="list-style-type: none"> • Staff in the PDoH • Staff in municipality together relevant information from existing tenants/occupants
<p>2. Development Provincial and Municipal CRU Plans</p>	<ul style="list-style-type: none"> • Information about existing occupants and their expectations and resources • Community engagement in understanding the possibilities within available resources • Occupant and other stakeholder contribution to formulation of feasibility 	<ul style="list-style-type: none"> • Outsourced to community facilitation Consultants a part of separate contract • Work with team contracted to carry out feasibility

PHASES	OUTPUTS	RESPONSIBILITIES
3. Project Feasibility	<ul style="list-style-type: none"> • Occupants and community contribution to the planning, zoning and EA process • Occupants and key stakeholders contribution to the detailed design • Any existing occupants requiring decanting are moved successfully 	<ul style="list-style-type: none"> • Outsourced as part of overall contract to team doing planning, zoning and EA • Outsourced as part of overall contract to team doing detailed design • Outsourced as part of a contract to Community Facilitation Consultants
4. Project Preparation	<ul style="list-style-type: none"> • Community engagement before and during the construction period to ensure the smooth running of construction contract 	<ul style="list-style-type: none"> • Outsourced as part of the overall contract for construction and support by municipalities own facilitation capacity
5. Implementation	<ul style="list-style-type: none"> • Community engagement before and during the construction period to ensure the smooth running of construction contract • Marketing of units to new tenants 	<ul style="list-style-type: none"> • Outsourced as part of the overall contract for construction and support by municipalities own facilitation capacity
6. Stock Management	<ul style="list-style-type: none"> • Moving back former occupants who are entitled to new units. • New tenant engagement in the contribution to management of the stock. 	<ul style="list-style-type: none"> • Outsourced as part of Contract to Community Facilitation Consultants • Responsibility of the municipality or management agent with their own funds.

THE IMPLEMENTATION PROCESS

The implementation phase is the fifth phase of the CRU programme, whereas the outputs of this phase are listed below:

- The first output is for accepted/permitted projects to be developed as scheduled on the project plans, and
- The second output is for the project owner to take possession of the new developed property.

The key role-players for the implementation phase are the:

- The Municipality
- Service Provider (the consulting and contractor organizations)
- PDoH

The flow diagram of the implementation process is shown in Figure 21.

PROGRAMME	PHASE	PROCESSES	PREDECESSOR
CRU	5	6	4

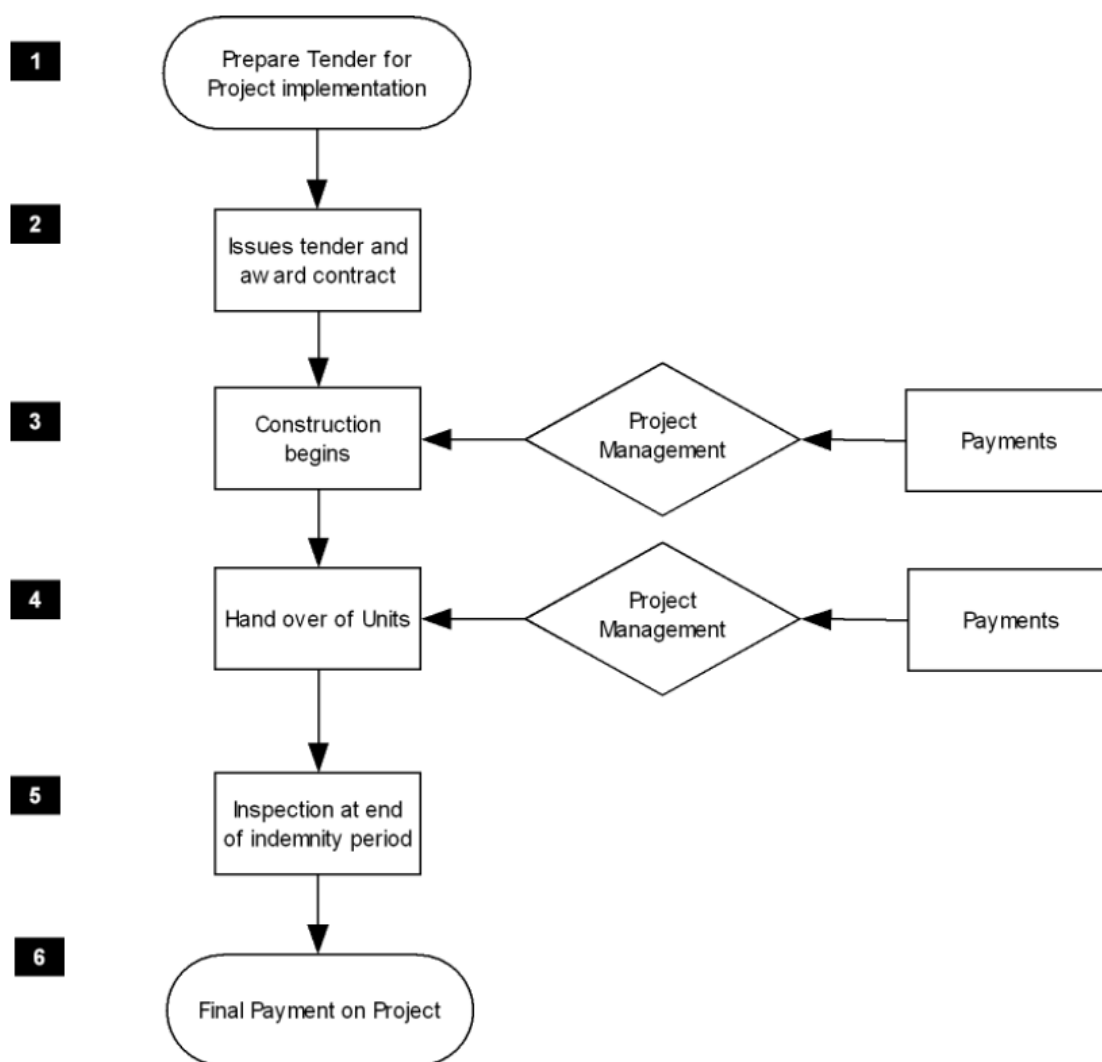


Figure 21: The implementation process of CRU projects (Community Residential Unit Implementation Delivery Chain, 2008)

ROLE PLAYERS AND RESPONSIBILITIES

A description of the activities and the role players involved in the specific activity regarding the implementation phase is given in Table 20. The activities are numbered from 1 to 6 as seen in Figure 21 and in Table 20.

Table 20: Role players and responsibilities of the main role players in the implementation phase of CRU projects (Community Residential Unit Implementation Delivery Chain, 2008)

NO.	Role Players	Activity	Detail
1	<ul style="list-style-type: none"> Municipality 	Prepare Tender	The municipality must prepare a set of project implementation terms of reference based on the outputs from the previous phase.
2	<ul style="list-style-type: none"> Municipality 	Issue and awarding of tender	<p>The municipality will issue out the tender and select a provider as per the standard procurement processes that municipalities must follow.</p> <p>The municipality must decide how it wishes to administer the tender – open tender, pre accreditation of suppliers etc. – the end result being that the municipality must procure the best provider.</p> <p>All providers who bid for the project implementation must be registered with the NHBRC and CIDB.</p> <p>A contract must be entered into the contract can cover the following:</p> <ul style="list-style-type: none"> Detailed description of work General conditions relating to contractual obligations Special conditions of the contract such as extensions on time etc. Insurances and performance guarantees Project specifications which are particular to the project Schedules of milestones and payments
3	<ul style="list-style-type: none"> Municipality Service Provider PDoH 	Construction Begins	<p>The appointed service provider will undertake the construction as per the submitted project plans.</p> <p>The municipality will implement a project / contract management process to track the implementation.</p> <p>If the municipality signs off on the completion of a milestone,</p>

NO.	Role Players	Activity	Detail
			<p>payment can be authorised. Payments will be released from the PDoH against successful milestones.</p> <p>The municipality must pay particular attention to the quality of the units being developed; this is to prevent early decay of the units and to limit unnecessary short-term repairs.</p>
4	<ul style="list-style-type: none"> • Municipality • Service Provider • PDoH 	Handover of completed Units	<p>Completed units handed over to the municipality must be signed off and then enter an indemnity phase – where the units must stand up to scrutiny.</p> <p>Handover of units is a milestone against which service providers can be paid. Payments will be released from the PDoH against successful milestones.</p>
5	<ul style="list-style-type: none"> • Municipality • Service Provider • PDoH 	Inspection at end of indemnity period	The municipality and the PDoH must undertake a final set of inspections after the indemnity period to satisfy themselves with the construction quality.
6	<ul style="list-style-type: none"> • Municipality • PDoH 	Final Payments	<p>If the municipality and the PDoH are satisfied after the inspections in step 5, the service provider can be paid the final tranche.</p> <p>NB: PDoH will release the final payment to the municipality for disbursement to the service provider.</p>

6.2.2 INTEGRATED RESIDENTIAL DEVELOPMENT AND RURAL SUBSIDY: INFORMAL LAND RIGHTS

The Department of Human Settlement produced the Housing Project Process Guide in September 2009. The Housing Project Process Guide has evolved based on experience and changing needs over the last 12 years.

The Housing Project Process Guide (2009) is developed for the following three programmes that are mostly used for subsidized housing development:

- The Integrated Residential Development Programme
- The Upgrading of Informal Settlements Programme
- Rural Housing Subsidies: Communal Land Rights Programme

The focus is only on the Integrated Residential Development Programme and the Rural Housing Subsidies: Communal Land Rights Programme, because their implementation processes are similar. This is shown in Figure 22.

The Integrated Residential Development Programme (IRDP) is about the development of integrated human settlements in well-located environments that provide suitable access to urban facilities, including places of employment. The Programme also aims at creating social unity. This programme *“provides for the acquisition of land, servicing of stands for a variety of land uses including commercial, recreational, schools and clinics, as well as residential stands for low, middle and high income groups.”* (Housing Project Process Guide, 2009:9)

The Rural Housing Subsidy: Communal Land Rights programme only applies in areas of public tenure and subsidies are available on a project basis but can be applied to meet real needs. The Programme works with housing subsidies for housing development projects on public land that is registered to the State and which will be occupied by community members. (Housing Project Process Guide, 2009:10)

“This Housing Project Process Guide is not intended to replace or repeat information and guidelines in the Housing Code, but is specifically intended to assist managers at all levels to understand the processes that projects must go through to achieve the required end product, the relationships between the processes, the required time frames and the responsibilities of the various role-players and professionals involved. The guide is not a comprehensive project management guide, but a tool for the successful project management of housing projects.” (Housing Project Process Guide, 2009:2)

The following processes in the Housing Project Process Guide (2009:34) are identified in a generic housing project:

- Township Establishment: Pre Application
- Subsidy Application
- Environmental Impact Study
- Compilation & Submission of Application
- Land Surveying & Conveyancing
- Sales Administration

- Land Servicing
- House Construction
- Project Handover

The focus is mainly within the ‘House Construction’ process of the housing project. The ‘House Construction’ process in the project schedule (Appendix B – ‘House Construction Schedule’, Gantt chart) is considered as the implementation process (Appendix B – ‘Housing Programmes’, Flow diagrams) discussed below. A full schedule is provided of the ‘House Construction’ process in the ‘the schedule of the implementation process’ subsection, at a later stage in this section of the chapter.

The complete flow diagram of the housing project process guide is presented in Appendix B.

THE IMPLEMENTATION PROCESS

This part of the chapter focuses on analysing the implementation phase of housing development project and identifying the role players and their responsibilities regarding the implementation process according to the Housing Project Process Guide (2009).

The roles and responsibilities, as well as the flow diagram of the implementation process are shown and discussed in this section. The flow diagram of the implementation process is shown in Figure 22, as well as the complete flow diagram of the entire programme is in appendix B.

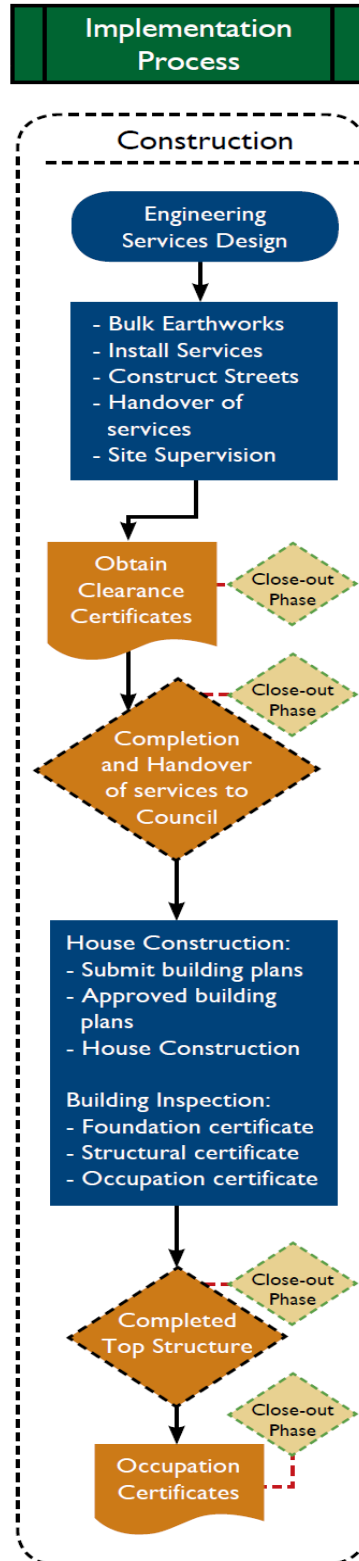




Figure 22: The implementation process of Integrated Residential Development and Rural Subsidy projects (Housing Project Process Guide, 2009)

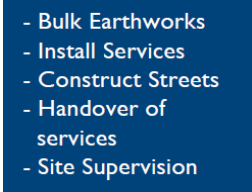

ROLE PLAYERS AND RESPONSIBILITIES

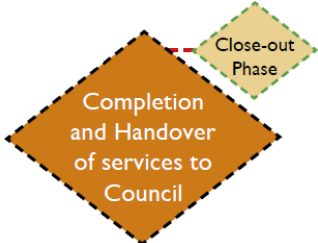

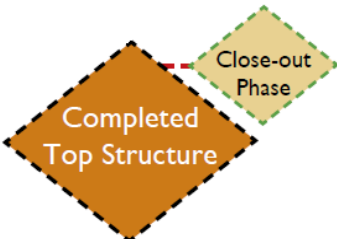
The terminology used is that “Developer” indicates that the Government department at provincial or local level is responsible for the implementation of the project. “Contractor” indicates that any private company is contracted by the government to fulfil numerous functions on the project whether it is project management, construction of the project or providing a professional service (deliver housing goods and/or services) (Housing Project Process Guide, 2009:1). This terminology is only applicable within Table 21.


Descriptions and the responsible role players of the individual components/tasks involved in the implementation process are given in Table 21.

Table 21: Role players and responsibilities of the main role players in the implementation phase of Integrated Residential Development and Rural Subsidy projects (Housing Project Process Guide, 2009)

Step	Task	Description	Responsibility
1		The implementation of the construction phase is started. During this process execution of all the procedures beforehand should be put in place (as seen in Appendix B).	Professional Team Local Municipality Contractors
2		The civil / electrical / traffic engineers will use the services agreement and approved layout plan for preliminary engineering services design and the approved general plan as well as the town planning layout to finalize the design of the services for the development. These services will normally not include the design of the	Civil Electrical Traffic Engineers Municipality

Step	Task	Description	Responsibility
		<p>external bulk and link services; however exceptions to the rule might apply depending on the stipulations of the service agreement. The design must be approved by the Municipality</p>	
3	 <ul style="list-style-type: none"> - Bulk Earthworks - Install Services - Construct Streets - Handover of services - Site Supervision 	<p>Prior to the commencement of any construction related activity the following documentation related must be available. These include, but not limited to approve land use rights, a positive geo-technical report, a positive Record of Decision (EIA) and an approved occupational health and safety plan.</p> <p>The necessary earthworks are conducted and services installed under the supervision of the site engineer. On completion of and after testing the services installed and constructed, the hand-over of services to the relevant municipality will take place.</p> <p>In addition to the above, contractors will also need to provide details in terms of standard contracts.</p>	<p>Engineers Contractors Municipality</p>
4		<p>The Conveyancer will obtain the necessary tax clearance certificate from the local municipality for the transfer of erven.</p>	<p>Conveyancer</p>

Step	Task	Description	Responsibility
5	<div data-bbox="368 311 620 598" style="background-color: #004a87; color: white; padding: 5px;"> <p>House Construction:</p> <ul style="list-style-type: none"> - Submit building plans - Approved building plans - House Construction <p>Building Inspection:</p> <ul style="list-style-type: none"> - Foundation certificate - Structural certificate - Occupation certificate </div>	<p>The architect will compile and submit building plans to the Municipality for approval prior to the commencement of construction.</p> <p>Upon completion of the top structure an engineer will certify that foundations and structural elements of the house are satisfactory for human occupation.</p>	<p>Architect</p> <p>Structural Engineer</p>
6		<p>The engineer services are handed over to the Municipality</p>	<p>Contractor</p> <p>Developer</p> <p>Municipality</p> <p>Project Manager</p>
7		<p>A final inspection is undertaken by the Municipality.</p>	<p>Civil</p> <p>Electrical Engineers</p> <p>Architect</p> <p>Project Manager</p>
8		<p>The top structures are completed. Completion certificates issued.</p>	<p>Project Manager</p> <p>Contractor</p> <p>Architect</p>

Step	Task	Description	Responsibility
9		On completion of the construction of the houses, occupation certificates are obtained from the Municipality.	Contractor Architect Developer Municipality

THE SCHEDULE OF THE IMPLEMENTATION PROCESS

The processes followed in the construction phase of housing development projects are listed below. This list of activities would contribute as a general tool to help plan and schedule the implementation process to specific project requirements in order to manage the project. The specifications would vary between individual projects, but the Housing Project Manager could use the provided list to plan the specific project (Housing Project Process Guide, 2009). These steps are within the 'House Construction' process before the 'Project Handover' process, as seen in Appendix B.

- **Preliminary design**
 - Prepare preliminary design
 - Prepare abbreviated specifications
 - Prepare cost estimates
 - Review and award tender
 - Approval of product
- **Detailed design and specifications**
 - Prepare detailed design
 - Prepare specifications
- **Tender process and award**
 - Call for tenders by issuing the necessary documents
 - Evaluate tender and tender report
 - Review and award tender
 - Appoint contractor

- **Completion of contractual requirements**
 - Approve insurance and guarantees
 - Approve Occupational Health and Safety (OHS) Plan
 - Determine contractual dates and communication procedures
- **Building plan approval**
 - Submission of individual building plans
 - Approval of building plans
- **Construction of houses**
 - Construction of houses
 - Structural inspection
 - Measurements and interim certification of completed work
 - Resolve claims and extra work
- **Completion handover process**
 - Arrange completion inspection (building control)
 - Accept handover in terms of contract
 - Completed top structure
- **Maintenance period**
 - End of maintenance inspection and rectification
 - Final completion certificate

The full Gantt chart is shown in Appendix B.

6.2.3 SUMMARY

The purpose of these Guidelines is to provide an easy-to-understand overview of the various housing subsidy programmes to assist the role players with scheduling their specific responsibilities regarding the implementation phase of the housing project.

It is important that the management teams understand their individual roles and responsibilities when managing within this multi-disciplinary work environment.

6.3. CONCLUSION

The emphasis of the chapter was on the roles and responsibilities within the physical development/execution phase of housing projects, as well as several design responsibilities.

It is clear that the execution phase of the project requires the most effort and input. The physical development determines the conditions and quality of the settlement which controls if the settlement is a sustainable development. The Housing Project Manager should understand each of the different housing programmes and the individual responsibilities attached to these programmes.

The Housing Project Manager does not contribute directly to the design of the settlement however should certainly understand every aspect from a designed infrastructure regarding the development of the new human settlement. This includes the location of the settlement, through to the location of each facility within the settlement.

Through carefully analysing this chapter, the following responsibilities of the Housing Project Manager are identified. The civil engineering responsibilities as well as the housing management related responsibilities that are present within this chapter are extracted and shown in Table 22.

Table 22: Identified responsibilities in Chapter 6

Civil Engineering Responsibilities	Housing Management Responsibilities
<ol style="list-style-type: none"> 1. Different stages of any project 2. Time management (scheduling) 3. Cost management 4. Quality management 5. All design related responsibilities 6. All construction related responsibilities 7. Communication with main role players 	<ol style="list-style-type: none"> 1. Different stages of housing projects (strategies) 2. Time management (housing process scheduling) 3. Different housing programmes/policies 4. Different housing processes 5. Understand the roles and responsibilities of the different main role players

The housing management responsibilities are considered as additional responsibilities that the civil engineer should obtain to be successful in the housing management environment. These responsibilities contribute to the final postgraduate course framework proposal in chapter 9.

CHAPTER SEVEN

CASE STUDIES AND FINDINGS REGARDING ROLES AND RESPONSIBILITIES OF THE HOUSING PROJECT MANAGER

7.1 INTRODUCTION

This chapter focuses on the need for civil engineers receiving additional training towards becoming Housing Project Managers when operating in the housing environment. It is essential to identify why civil engineers can play a meaningful role as Housing Project Managers and why they should be able to manage the execution of the construction of these projects. This chapter is divided into three subchapters as seen on Figure 23.

The first subchapter presents several housing case studies where management problems and specifically technical problems occur. The technical nature of problems encountered on housing projects thus identifies a need for civil engineers to be operating in housing projects.

The second subchapter presents empirical results. Several members within the housing industry were consulted with a standard set of questions to identify the need for civil engineers as Housing Project Managers in order to identify the current skill set requirements for a Housing Project Manager.

The third subchapter focuses on some of the literature results that identify the need to educate the local authority officials in housing, as well as on the problem areas within the educational systems for the local authorities. As discussed in chapter 3 and chapter 4, the Housing Project Manager may be located at local authority level, thus emphasizing the need to educate the local authority.

Although there is no direct flow between these three subchapters, as seen in Figure 23, each has the same goal. The goal is to identify the role for civil engineers in the housing industry as Housing Project Managers.

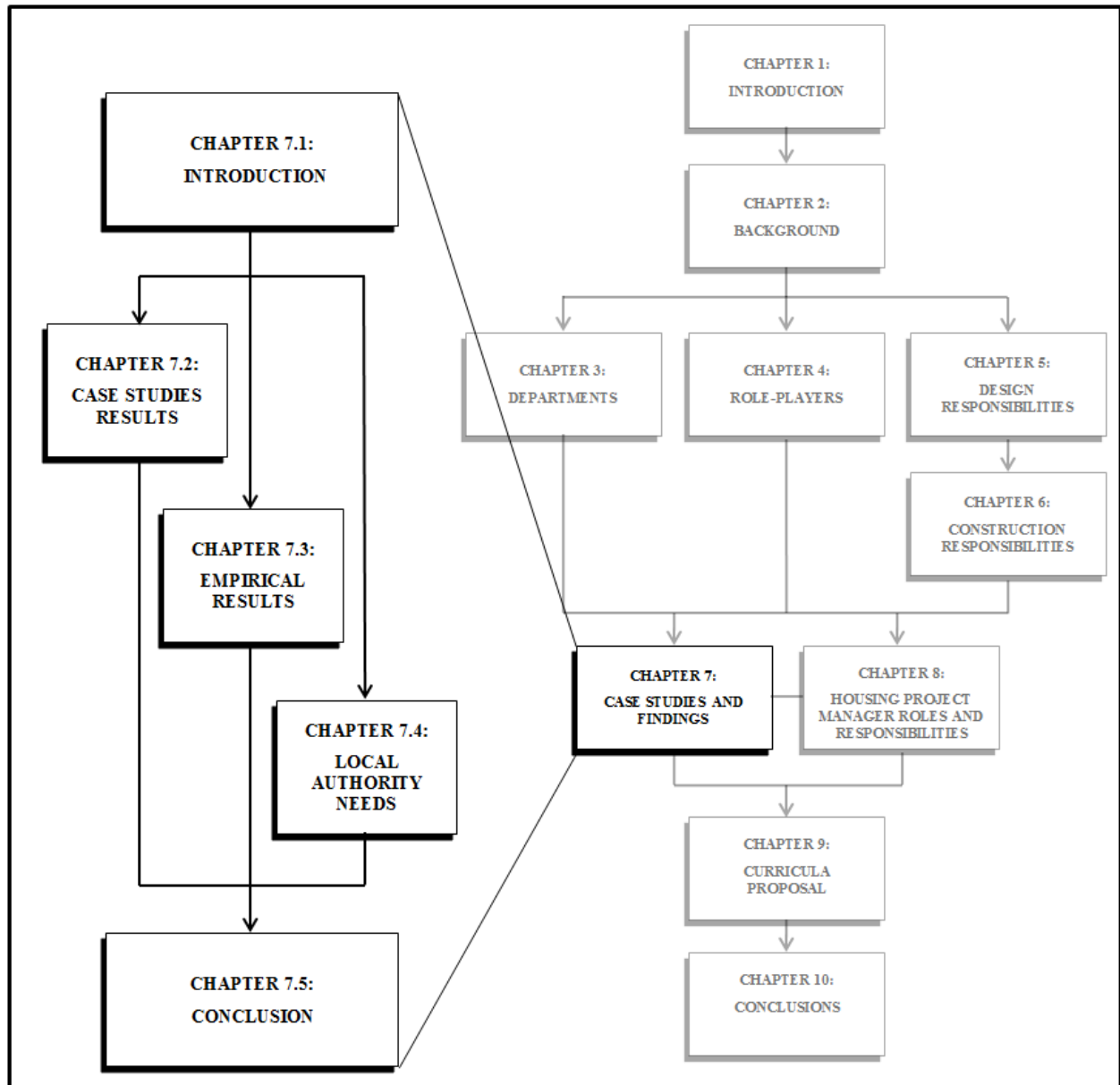


Figure 23: Overview of Chapter 7

7.2 REVIEWING OF CASE STUDIES

Several different existing housing settlement summaries were carefully studied in order to obtain information to verify the need for Housing Project Managers to possess the knowledgeable skill sets (work experience, educational training) of an engineer or an architect. Three problem areas are considered and presented: (i) the management problems, (ii) the technical skill sets related problems, and (iii) the problems created by external departments other than that of the Housing Project Manager. The case studies are described

in publications of the Social Housing Foundation and describe problems related to the topic of this study, while the rest of the case studies are suggestions from the interviewees. The N2 Gateway housing project is a well-known project with several technical and management problems, thus making it an ideal case study.

7.2.1 MANAGEMENT PROBLEMS

Most housing projects have small, medium and micro-enterprise (SMME) builders and contractors, where cautious planning and co-ordination is necessary to ensure that the requirements of the National Home-Builders Registration Council (NHBRC) are met (Moshoeshoe Eco Village, 2007:7).

One of the needs is to monitor quality of the construction on site. The Congress inspectors do not visit the construction sites often enough, and can thus not be completely depended upon to fulfil this role (Troyeville, 2005:7). The role of the project manager on site includes managing of quality-control inspections on behalf of the client. This has been proven beneficial in ensuring the overall quality of the product (Walter Sisulu Square Precinct - Kliptown, 2006:7).

The type of units constructed through SMMEs delivers fairly low maintenance requirements, however this is not the case with the type of materials occasionally used. High maintenance impact materials are often associated with housing projects, and perhaps better quality materials with a lower maintenance impact should be specified (Amalinda, 2005:7). This requires a reasonable balance between the cost, quality and durability of materials (Living Stones, 2005:7). The material costs can be reduced if the dimensions of the unit are better designed (Sakhasonke Village, 2006:7). All three targets (quality, time and cost) can only be achieved when all the information is available. However all the required information is almost never available and this results in one or two targets being traded off against each other to achieve project success (Leigh Burgoyne, 2008). Often the post project evaluation reveals important information which can be useful for future projects. It reveals areas of improvement for consideration by a Housing Project Manager.

7.2.2 TECHNICAL SKILL

The housing and infrastructure problems are not always the result of a lack of financial resources, but could also be as a result of the lack of capacity and planning capabilities amongst those responsible for assigning the required role players and departments (Leigh Burgoyne, 2008). As identified in chapter 4.3 from Hauptfleisch & Sigle (2007), it is the responsibility of the civil engineer when he/she is principal agent to appoint the members of a professional team, thus assigning the responsibility to the civil engineer to appoint the required private sector role players (the construction contracting and design consulting firms responsible for the execution of the project).

One of the experiences gained studying the Walter Sisulu Square Precinct (Walter Sisulu Square Precinct - Kliptown, 2006), bearing in mind the responsibilities of the design consultant, is that the effective design of an open area within a housing unit is important. Although there may be enough open floor area, it is essential that this area be used as intended. The design of the open-plan space depends on the number of occupants per unit and the number of bedrooms per unit (Walter Sisulu Square Precinct - Kliptown, 2006:7). All the members of the professional team, especially the architects, should contribute early on to the process so that likely problems can be solved as they appear. *“In most cases, the urban designers do not have much experience in social housing and thus an experienced architect should be part of the project at the onset to provide this expertise.”* (Brickfields and Legae, 2005:10)

The problem with some housing projects is the complexity of the designs, which tends to create an increase in the project cost. The emerging construction companies are usually appointed to construct the top structure and because of the complexity of the design and the experience of the contractor this could create delays in the construction of the top structures. The success of some housing projects is that the designs of the units are simple and are easy to position on the site. The key factor is the facilities and public areas in-between and around the flat blocks that appeal to the community and provides a sense security (Royal Maitland, 2005:17).

7.2.3 THE ROLE OF EXTERNAL ROLE PLAYERS

Housing projects are a very specific type of project, which creates competition that results in conflict between beneficiaries themselves, as well as between beneficiaries and local housing authorities (Leigh Burgoyne, 2008). In order to resolve these conflict workshops can be created at the conception of the project between the different role players (professional team, local authority, beneficiaries). This will provide a helpful forum in which the concept designs and vision for the project can then be established. Collaboration is considered to be a key component in the success of the project design and layout. Management of the development process should be engaged “in house” in order to take full advantage of the skill of the development institution and to improve their experience obtained in previous projects (Troyeville, 2005:7). Because management of the development process should be engaged within the office and not on site, this emphasizes the need for the Housing Project Manager to be educated in Housing Management to work together with the other HMPs located off site.

It was found at the N2 Gateway project that engagement between the various government authorities and the affected communities is required within projects (N2 Gateway Project, 2009). The involvement and consultation of the community at the beginning of the housing project is necessary to develop a successful project (Royal Maitland, 2005:7). It is also essential that the community is involved during the development process, not only to confirm that the project meets the identified needs of the community, but also to provide the beneficiaries a chance to participate in the design development of the housing units (Sakhasonke Village, 2006:7).

There were many more similar problems that occurred with the N2 Gateway Project that needed to be addressed. Focusing only on the N2 gateway – Joe Slovo project, the following problems were identified as seen in Table 23 (N2 Gateway – Joe Slovo (Phase 1), 2008:366-367). Table 23 identifies which of these problem statements require training for a civil engineer, and which of these problem statements the civil engineer can already solve.

Table 23: N2 Gateway – Problems and Problem areas (N2 Gateway – Joe Slovo (Phase 1), 2008:366-367)

Problem areas	Problems	Civil Engineer -
Community representatives	Poor administration and management of rental housing.	Require Training
	Poor communication between the three spheres of government (National, Provincial & Local).	Require Training
	Political interference.	Require Training
	Poor workmanship.	Skills developed
	The use of ‘cheap’ material in order to save on costs.	Skills developed
	Lack of communication between the project manager and the community.	Require Training
	There was no structure in place regarding maintenance.	Skills developed
	Committee members reported that “the entire project had serious defects” such as cracked walls and faulty plumbing.	Skills developed
Project manager	Maintenance and monitoring.	Skills developed
	Communication and partnership: communities are not taking ownership.	Require Training
	Social pathology in the project area.	Require Training
	Poor planning.	Skills developed
	Poor quality of construction.	Skills developed
	Affordability.	Not Applicable
Provincial Government of	Poor institutional arrangement.	Not Applicable
	Poor management of contractors by project manager.	Skills developed

Problem areas	Problems	Civil Engineer -
Western Cape	Poor administration of rental collection and maintenance of services (non-payment of rent).	Not Applicable
	The failure of the social housing policy – social and other rental housing programmes should be revised and made more practical.	Require Training
	Capital shortfall.	Not Applicable
	Maintenance issues.	Skills developed
City of Cape Town	Policy inertia – lag between vision and appropriate funding instruments.	Not Applicable
	Communication problems.	Require Training
	Political interference.	Require Training

Having learned lessons from the N2 Gateway project, it was found that “*The Joe Slovo construction development project following the sod turning at the beginning of March 2011 represented a breakthrough in a troubled project which has been under the control of the Constitutional court. Consensus has been achieved with all those involved. It is also a new example of a densification project utilizing government subsidies.*” (Sexwale, 2011b).

7.2.4 SUMMARY

The identified management problems that occur are mainly on the subject of quality management. A strong background in civil engineering or construction engineering will be most beneficial in order to manage the quality of a construction project.

It is shown in the case studies considered that the identified technical problems are often due to a lack of proper designing and planning of the urban layout. The design and planning of the layout of a settlement or a housing project can result in the simplest of problems which may affect the future of the community. If the layout designs (inside and outside the units) are inefficient, this could create inconvenience and security issues for the community. The

design of such an area requires the combined technical expertise of a civil engineer and an architect.

Reviewing the different identified problem areas in the case studies considered, several problems occurred that could have been resolved by educating civil engineers towards housing management.

7.3. EMPIRICAL INVESTIGATION

This section provides the information obtained by interviewing several key role players within different sectors of the housing environment.

To truly grasp the current housing situation in South Africa, several housing management professionals were consulted with a standard list of questions, as seen in Appendix A. In this process, three key role players from the housing industry were consulted:

- Keuler, J: housing manager located in the private sector.
- Van Stavel, L: housing manager located in the municipality.
- Douglas, D: housing manager located in the implementing agency (as discussed in chapter 3.4)

By considering several viewpoints as shown in Figure 24, a better and balanced understanding of the current housing situation can be derived. The questions were all based on the identification by means of the literature study of the required responsibilities and skill sets of a HPM. Through a set of questions posed at different professionals it helped to provide a better insight into the requirements of the HPM.



Figure 24: Strategy of questionnaires

7.3.1. THE QUESTIONNAIRE

The questionnaire consists of several lists of skills required from any manager, these lists were obtained from the *Guide of the PMBOK* (2008) and Davidson Frame (1999). The questionnaire also consists of standard questions derived from the case studies, to obtain specific information regarding the roles and responsibilities of the Housing Project Manager.

The first topic discussed is to identify the specific skills required for a Housing Project Manager and then identify which of these skills are lacking in current Housing Project Managers. A list of technical skills, interpersonal skills, intrapersonal skills and general business skills is provided from which the interviewee can choose and add his own opinions if necessary.

The second topic discussed is to identify the most important problems currently regarding housing development projects in South Africa and what should be done to improve this.

The set of questions was composed to identify the requirements for a Housing Project Manager with the purpose of the main theme of the thesis, namely to compile curricula for civil engineers that want to be educated in housing project management.

The complete questionnaire is provided in Appendix A

7.3.2. KEULER (2011)

Keuler (2011) is a Project Manager (housing projects) for Aurecon, which is a private sector company providing consulting and project management services for infrastructure projects, including housing development projects.

With the first question, Keuler (2011) identified from the provided list of skills (Questionnaire - appendix A) the following skills that current Housing Project Managers are lacking:

- Technical skills
 - Cost management
 - Communication management
- Interpersonal skills
 - Influencing
 - Decision making
 - Political and cultural awareness
 - Negotiation
- Intrapersonal skills
 - Human relations

A further discussion was conducted regarding the two identified lacking technical skills.

- Cost management – for housing projects, controlling cost flows is very important during the execution of the construction, because the costs of the individual tasks tend to change continuously.
- Communication management – communicating with the other involved parties and negotiating terms of contracts are difficult. The project manager needs to be politically and culturally aware when managing housing projects and communicating with the other departments as well as the community.

With the second question, Keuler (2011) identifies the following problems with the housing industry:

- One of the main problems with housing development projects in the Western Cape is to develop low cost houses in high density areas. There is not much open land left for housing development projects in the Western Cape and constructing houses outside the towns creates a problem with transport and with available job opportunities in that area.
- Because of the cultural background some parties prefer single level/story units to blocks of flats. The cultural background creates a conflict between what the community want and what they really need.

Keuler (2011) mentioned that the two ways of constructing housing projects are:

- Appointing a construction contractor to construct the units – This process is reliable and is executed the same as any other construction project. The construction contractor firm has trained labourers and qualified managers managing the project.
- PHP (People Housing Process) – This method is when the involved communities construct their own houses. Although this method allows for the community to be trained in construction labour, this method has many problems which include:
 - Under-qualified manager.
 - Untrained labourers.
 - Limited to the construction of single storey houses
 - Not meeting the terms of the correct codes and procedures or sometimes not meet the terms of any codes or procedures.
 - Corruption
 - Money gets miss-managed
 - Materials gets lost or stolen
 - Sometimes constructing on the wrong properties
 - Does not create permanent employment, only short duration employment

7.3.3. VAN STAVEL (2011)

Van Stavel (2011) is a manager (new housing) for Stellenbosch Municipality. He is part of the public sector involved in the management of housing development projects.

With the first question, Van Stavel (2011) identified from the provided list of skills (Questionnaire - appendix A) the following skills that current Housing Project Managers are lacking:

- Technical skills
 - Cost management
 - Risk Management
 - Communication management
- Interpersonal skills
 - Influencing
 - Political and cultural awareness

A further discussion was conducted regarding the following two of the three identified lacking technical skills.

- Communication management – Because of the involvement of the public in housing projects, the concept of communication is completely different from the communication of other construction projects.
- Risk management – The involvement of local labour slows down several aspects, thus increasing the risks significantly and increasing the need to be better prepared.

Van Stavel (2011) also stated that the Housing Project Manager has great knowledge of the technical skills, but not enough skill regarding the interpersonal skill sets. A Housing Project Manager needs a better balance between the different skill sets.

Van Stavel (2011) identifies the following problems with the housing industry:

- The available budget for constructing the required unit is often not enough to construct the units within the required specifications/quality.
- Major construction companies that possess sufficient experience would not normally accept housing projects because of the high risk and low profit associated with housing development projects.
- Housing development projects normally require the employment of local labour to construct housing units. Because of the lack of training and experience with the local

labourers there is a high risk attached to these types of projects. These risks are normally the quality of the infrastructures, delays in the schedules that can create cost overruns.

7.3.4. DOUGLAS (2011)

Douglas (2011) is a project manager (housing projects) for Asla Devco. Asla Devco as a NGO and it acts as an implementing agency for the municipality for the consulting and construction of housing development projects.

With the first question, Douglas (2011) identified from the provided list of skills (Questionnaire - appendix A) the following skills that current Housing Project Managers are lacking:

- Technical skills
 - Time management
 - Cost management
 - Communication management
- Interpersonal skills
 - Communication
 - Influencing
 - Decision making
 - Political and cultural awareness
 - Negotiation
- Intrapersonal skills
 - Coping skills (e.g. conflict, being flexible)
- General business skills
 - Customer focus
 - Administrative skills
 - Soft skills (e.g. Empathy)

7.3.5. SUMMARY

After consulting with individuals operating in the housing industry, skill sets were identified to be required for Housing Project Managers. Several NGOs (non-governmental

organizations) and municipalities were consulted. Furthermore, meetings were scheduled with both the construction and consulting industries (Asla Devco, Stellenbosch Municipality, Aurecon). In addition, specific skill sets were identified that are lacking in current Housing Project Managers. When composing the different courses for the proposed curricula, attention should be given to all the skills provided in Appendix A (lists of skills), however additional attention is required towards the following identified skills when educating Housing Project Managers.

The important identified technical skills as identified from the three participants are:

- **Cost Management:** Controlling the cost flow in a housing project is of critical importance because available funds have a tendency to change throughout the project (Keuler, 2011; Van Stavel, 2011; Douglas, 2011).
- **Time Management:** Project scheduling is relatively difficult and a challenge for many managers due to the large number of institutional departments involved in the project and the prevalence of political interference (Douglas 2011).
- **Communication Management:** Communication is essential between the different departments and with the communities involved with the projects. The large number of project stake holders makes this a very challenging part of a project (Keuler, 2011; Van Stavel, 2011; Douglas, 2011).

The important identified interpersonal skills are:

- Political and cultural awareness
- Decision making
- Negotiation
- Influencing

The general business skills are:

- Customer focus
- Administrative skills
- Soft skills (e.g. Empathy)

7.4 HOUSING MANAGEMENT REQUIREMENTS

The focus of this subchapter is on identifying several housing management problems and requirements within the local authority. As discussed in chapter 3 and chapter 4, one of the responsibilities of the Housing Project Manager is to provide sufficient communication between the private sector (professional team) and the 'Housing & Land' sub-department which is at local government level. Several documents were identified regarding the education and training needs of the local government towards housing management problems and challenges related to the local and national authority. These documents are discussed in this section.

7.4.1 EDUCATION AND TRAINING NEEDS OF LOCAL AUTHORITIES

Crofton (1997:219-224) identifies the twenty important education and training needs for local housing officials in the Cape Metropolitan Area. The identified education and training needs are presented in Table 24 and are listed from the most highly-rated need to the least needed.

Table 24: Education and training needs of local authority housing officials in the Western Cape (Crofton, 1997)

1. National and local housing Policy (content, formulation process, subsidies, housing processes, maintenance and upgrading)
2. **Project management (technical / engineering aspects, financial management, delegation, housing processes)
3. **People skills (interviewing, customer care, communication, public relations, chairing meeting, computer skills, understanding personalities)
4. Community development (holistic thinking, dealing with ignorance, socio-economic status, identification of beneficiaries, orientation of officials, bottom-up initiatives, participation, funding and legal aspects of housing associations)
5. **Conflict resolution (facilitation negotiation, labour action such as sit-ins and strikes)
6. **Management (motivation, internally focused and externally focused management)

Table 24: Education and training needs of local authority housing officials in the Western Cape (Crofton, 1997)

7. Local government law
8. Administrative law
9. Role clarity (understanding the roles of the three spheres of government and the local governments specific roles)
10. **Town planning (identification of suitable land, understanding civil engineer and bulk infrastructure provision, understand the maintenance of town planning aspects)
11. **Housing Maintenance (policy, technical aspects and sustainability thereof)
12. Changes in job description
13. **Leadership development
14. **Needs assessment (ability to conduct assessment surveys)
15. **Disaster management (e.g. fire crises in housing development)
16. **Safety and health
17. **Ethics
18. **Responsibility and quantification (quantify consequences, plans, ideas, proposals, policies..., a sense of responsibility)
19. Training of the trainers
20. **Presentation skills

(** indicates the skills already possessed by a civil engineer in Table 24).

The second identified skill indicates that project management is essential to housing management. It is also indicated that the understanding of the national and local housing policies is most essential to the current local housing officials, thus identifying the need to educate the local housing officials on housing policies. A civil engineer already contains several of the twenty identified needs (** indicates the skills already possessed by a civil engineer in Table 24), resulting that the focus would now be on educating the identified needs that normally lack in engineers.

There have been dilemmas in training at local government level identified in the past. Training focused only on one housing department group at a time and their responsibilities, thus excluding the responsibilities of the other housing department groups from their training. This has resulted in ineffective administrative systems at local level (McLennan & Wooldridge **in** Crofton, 1997:60). This especially affects housing projects. McLennan & Wooldridge (in Crofton, 1997:60) recognized that a great deal of emphasis has been placed on procedures rather than on performance, where this resulted in the role players being limited by their job descriptions and training experience, thus excluding the opportunity of improvement.

McLennan and Wooldridge (in Crofton, 1997:60-61) suggested that training policy should be in relation to the future needs, but several structural limitations such as the following may constrain this:

- The poor educational systems on which training programmes are built. “It must be realised that people cannot be expected to compete equally when they have not received equal opportunities, *inter alia*, in education, quality of life and exposure to public office” (Peneceliah, 1996:122 **in** Crofton, 1997:60)
- The limited resources (funding) in public services for training, which tends to reflect ignorance towards the training of officials. Wallis (in Crofton, 1997:60) states that there is a large resource gap at local authority level. This resource gap refers to the economic condition of the local authorities, to the workforce of the local government and to the capacity of these officials.
- Almost all the formal qualifications are only available from universities and technikons, and this undervalues work experience and performance.
- “*The strategy and style of institutional management, and the organizational forms and supporting policies, influence the content and quality of training*” (McLennan & Wooldridge, 1995:101 **in** Crofton, 1997:60).

It is recognisable that the educational system needs to improve in order to educate the local officials. The experienced officials also need to maintain their competencies through continuous professional development programmes as the policies and strategies change over time.

Lombard (1998:229-235) identified the following education and training needs among NGO housing staff in South Africa:

- Communications management;
- Organizational processes;
- Social development;
- Management / organizational;
- Administration;
- Public relations / marketing;
- Business / finance;
- Curriculum;
- Policy;
- Development;
- Legal knowledge.

The educational needs in NGOs should be satisfied through the development of skill sets in the areas of business, public and development management. The legislation and technical aspects of the Housing Project Management role should not be neglected. That is why there is scope for improving the knowledge of the built environment professions as well as Housing Management Professions through postgraduate curricula.

7.4.2 MANAGEMENT PROBLEMS AND CHALLENGES WITHIN LOCAL AUTHORITIES

There are also problems that should be avoided at local authorities through proper management. Verwey (Crofton, 1997:60) identified that for projects launched by local governments to be successful, the following drawbacks should be avoided:

- External specialists deciding on what is best for the communities, without allowing for what is really required for the communities.
- No clear direction in projects.
- Poor planning of projects.
- Only one person dominating the projects.

- Hidden agendas.
- Under-financing or over-financing of projects.
- Lack of responsibility and poor controls

However there are also performance gaps caused by aspects that not even training can address. Some of these aspects are:

- “External / personal pressures
- Attitude
- Inadequate equipment
- Working environment
- Lack of staff resources
- Lack of internal support” (Anon., 1997b:3 **in** Crofton, 1997:63)

These aspects should not be neglected from the educational systems but be enforced so that the official understands these aspects and why they are important. Some of these aspects cannot be taught to some officials, but there are ways of educating officials to better their interpersonal skills to cope with these aspects.

The government is still challenged to achieve their vision of a people-centred society to emerge at local government level. Hollis (1994:13) identified the following challenges for the local government in order to reach this vision.

- “Making a real contribution to policy development through its local experience and track record
- Putting the interest of the user first (and not the producer)
- Responsive – delivering what communities need, to those who need it, in the way they want
- Open – promoting devolution and encouraging participation by local communities in decision-making
- Efficient, publicly accountable, and scandal-free in its management and use of resources and in the conduct of its business” (Hollis, 1994:13)

7.4.3 MANAGEMENT PROBLEMS AND CHALLENGES AT NATIONAL AUTHORITIES

There are several management problems and challenges that the national authority is currently facing and has been facing since apartheid. *“Urban problems in developing countries have become more acute in recent years as more people have migrated to cities putting pressure on the urban infrastructure and physical environment”* (Baba, 1998). Royston (in Leigh Burgoyne, 2008) states that most housing subsidy projects are located on cheap land in peripheral locations. Van Wyk (2011b) stated that housing projects are normally located on the poor quality landscapes closest to job opportunities (inner city) and at times these poor quality landscapes are next to existing communities.

“In 2009 we provided more than 200 000 housing opportunities. ANC branches should assist in eradicating the problem of people who receive new houses, then rent them out and move back to informal settlements, causing government to chase moving targets. This irresponsible practice has to stop.” (Housing, 2011). This creates major problems such as inaccurate backlogs (not know the true informal settlement figures) and this also creates financial setbacks for the government.

For the past 17 years the Department of Housing has establish that in most of the housing projects where delay or problems occurred, happened due to essential steps in the development process being overlooked (Housing Project Process Guide, 2009:2). The Special Presidential Coordinating Council also confirmed and underlined the following challenges that are influencing the construction of sustainable human settlements in South Africa:

- *“The need to address the legislative environment that is hindering progress focusing attention on alignment of critical mandates and functions.*
- *Mobilization of non-financial resources, including land*
- *Exploring alternative funding models, and*
- *Paying attention to capacity problems, including project management and bulk infrastructure.”* (Sexwale, 2011b)

The Community Residential Unit Implementation Delivery Chain (2008:45) also identified some of the potential risks occurring in CRU housing projects. These risks are shown in Table 25.

Three broad types of risks were pointed out:

- Commercial risk
- Political Risk
- Administrative Risk

These identified risks are categorized in the project phases in Table 25.

Table 25: Risks occurring in CRU housing projects

PROJECT PHASES	COMMERCIAL	POLITICAL	ADMINISTRATIVE
1. Establishment		<ul style="list-style-type: none"> • A poor working relationship between the province and municipalities • a leadership struggle regarding the driving of the CRU task team 	<ul style="list-style-type: none"> • inadequate creation of internal capacity within the province • poor selection of members and establishment of the CRU task team
2. Business planning		<ul style="list-style-type: none"> • Power struggles regarding the selection of projects • lack of appropriate leadership by provinces 	<ul style="list-style-type: none"> • Technical difficulties with obtaining information from municipalities • Poor data received-difficulty in supporting clear decision making • Limited technical support to undertake the housing stock audit

PROJECT PHASES	COMMERCIAL	POLITICAL	ADMINISTRATIVE
3. Feasibility	<ul style="list-style-type: none"> • Provider costs higher than budget 	<ul style="list-style-type: none"> • Pressure to use specific providers • Council involvement in procurement • Hostile communities/ tenants- refusal to provide information or pay for services • Land claims • Re-prioritisation of municipal programmes 	<ul style="list-style-type: none"> • Limited ability of municipalities to choose appropriate service provider to conduct feasibility • Limited pool of skilled providers for municipalities to select from
4. Project planning		<ul style="list-style-type: none"> • Community protests against development • Community preferences with design difficult to accommodate 	<ul style="list-style-type: none"> • Problems with timely applications for zoning • Problems with accessing bulk services
5. Implementation	<ul style="list-style-type: none"> • Cost of material escalates • Unforeseen natural disasters 	<ul style="list-style-type: none"> • Design does not appeal to community 	<ul style="list-style-type: none"> • **Construction crew in wage negotiations • **Site accidents • **Faulty construction • **Poor monitoring of provider • **Provider unable to complete project • **Problems with design and design implementation • Power cuts slows down work

PROJECT PHASES	COMMERCIAL	POLITICAL	ADMINISTRATIVE
6. Stock management	<ul style="list-style-type: none"> • Inflation costs impact on the affordability of rental for tenants • Faulty construction leads to early maintenance • Unforeseen natural disasters 	<ul style="list-style-type: none"> • Unable to evict indigents and tenants who are unable to afford rental payments, including families with HIV/ AIDS and child headed households 	<ul style="list-style-type: none"> • Limited demand despite the completion of a detailed market survey • Non payment • High vacancy • Dissatisfied tenants • High incidents of unplanned maintenance

(** indicates the skills already possessed by a civil engineer in Table 25),

The Housing Project Manager is directly involved with the project planning phase and implementation phases of the housing project, therefore the focus is mainly on the risks relating to these two phases (phase 4: project planning and phase 5: implementation). There is not much that can be done to prepare for the commercial risks. For the political risks, better communication is required between the professional role players and the involved communities. The administrative risks require several technical management skills that are also essential engineering management skills, thus emphasizing the need for civil engineers as Housing Project Managers.

7.5 CONCLUSION

Through studying South African housing case studies and consulting with the housing industry, several specific management problems were identified that can be addressed by educating the Housing Project Managers to understand their role and responsibilities.

The reviewed case studies reveal that housing projects require, among other specific skill sets, civil engineering skill sets. The problems indicated through most of the case studies are related to a lack of effective technical skills in the built environment which prevents efficient management. This could be resolved by educating civil engineers as Housing Project Managers by providing them with further education towards housing management.

Through consulting with the different sectors in the housing industry as described in chapter 7.3, and comparing their results, they identified the same skills lacking of a Housing Project Manager. Civil engineers are already familiar with several of these identified skill sets. Because civil engineers have already developed most of the required skill sets, it would be suitable to educate civil engineers towards housing management.

Table 26: Identified responsibilities in Chapter 7

Civil engineering education and training needs	Housing management education and training needs
<ol style="list-style-type: none"> 1. Technical skills <ol style="list-style-type: none"> a. Cost management b. Time management c. Communication management 2. Interpersonal skills <ol style="list-style-type: none"> a. Influencing b. Decision making c. Political and cultural awareness d. Negotiation 3. General business skills <ol style="list-style-type: none"> a. Customer focus b. Administrative skills c. Soft skills (e.g. Empathy) 4. Leadership development 5. Needs assessment (ability to conduct assessment surveys) 6. Disaster management (e.g. fire crises) 	<ol style="list-style-type: none"> 1. National and local housing Policy (content, formulation process, subsidies, housing processes, maintenance and upgrading) 2. Community development (holistic thinking, dealing with ignorance, socio-economic status, identification of beneficiaries, orientation of officials, bottom-up initiatives, participation, funding and legal aspects of housing associations) 3. Local government law 4. Administrative law 5. Role clarity (understanding the roles of the three spheres of government and the local governments specific roles) 6. Changes in job description 7. Training of the trainers 8. Technical housing 9. Organizational processes

Civil engineering education and training needs	Housing management education and training needs
<p>in housing development)</p> <ol style="list-style-type: none"> 7. Safety and health 8. Ethics 9. Responsibility and quantification (quantify consequences, plans, ideas, proposals, policies..., a sense of responsibility) 10. Town planning (identification of suitable land, understanding civil engineer and bulk infrastructure provision, understand the maintenance of town planning aspects) 11. Housing Maintenance (policy, technical aspects and sustainability thereof) 12. Management (motivation, internally focused and externally focused management) 13. Project management (technical / engineering aspects, financial management, delegation, housing processes) 14. Presentation skills 15. Conflict resolution (facilitation negotiation, labour action such as sit-ins and strikes) 16. People skills (interviewing, customer care, communication, public relations, chairing meeting, computer skills, understanding personalities) 	

Table 26 identifies several education and training requirements for Housing Project Managers. Civil engineers already possess more than half of these identified aspects, thus indicating the need to educate civil engineers towards housing management as Housing Project Managers.

CHAPTER EIGHT

THE SKILL SET REQUIREMENTS FOR A HOUSING PROJECT MANAGER

8.1 INTRODUCTION

The majority of black citizens are struggling with housing problems and most are located squatting in the city backyards and informal settlements, while others have no homes at all (Baba, 1998). This confirms that South Africa has a major housing crisis which should be approached from all perspectives, one of which is the education of housing professionals.

This chapter focuses on the roles and responsibilities of the Housing Project Manager located within the professional team. This chapter is divided into three sub chapters, firstly describing the project manager, secondly describing the Housing Project Manager and, thirdly the current educational housing programmes available.

The first subchapter identifies the roles and responsibilities as well as a job description of the Project Manager (as located in professional team). There are several project management bodies and their requirements that needs to be considered when developing a curriculum for a project manager. The second subchapter identifies the roles and responsibilities as well as a job description regarding the Housing Project Manager. The Housing Project Manager has the same roles and responsibilities as a project manager. However, the Housing Project Manager requires several extra skill sets because of the multiple disciplines involved in housing projects (as discussed in chapter 4). Therefore, the third subchapter describes the educational housing programmes that are currently offered and those that are being composed.

It is essential in construction projects to plan and manage towards excellent performance. Since one of the housing project problems is inadequate performance by the Project Manager (located in professional team) the application of civil engineers is investigated as Housing Project Managers. The required strengths and weaknesses are identified. The findings in this chapter will help to identify the required competencies, knowledge and skill sets of civil

engineers operating in the housing environment. This will allow composing a postgraduate curriculum in order to prepare civil engineers towards housing project management.

The flow of this chapter is shown in Figure 25.

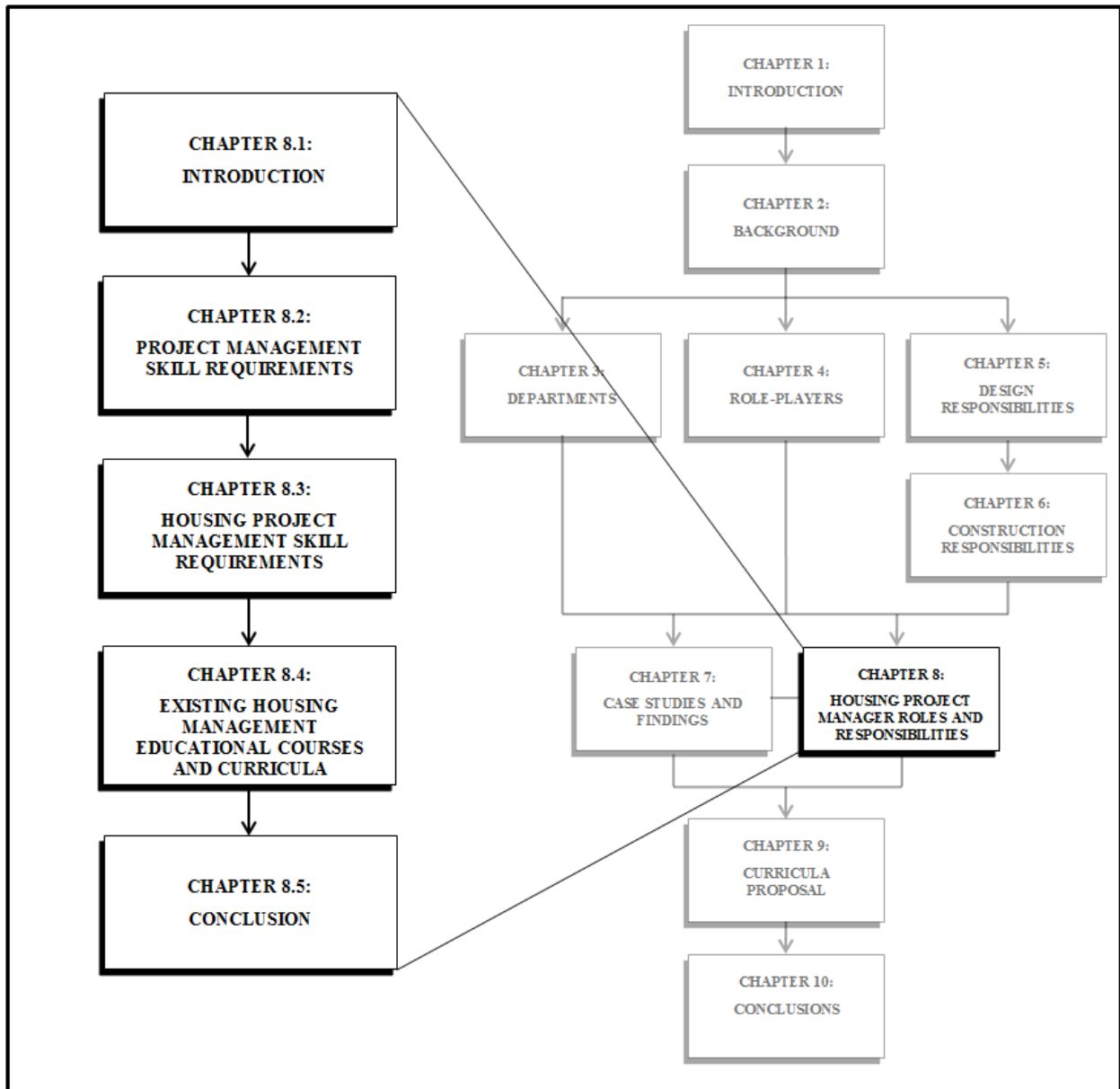


Figure 25: Overview of Chapter 8

8.2 PROJECT MANAGEMENT

This section provides the roles and responsibilities and the job description of a project manager in construction. The roles and responsibilities of a project manager must be

understood to be able to identify the additional responsibilities that define a Housing Project Manager.

There are many different definitions for a project. Gray & Larson (2006:4) describes a project as *“a complex, non-routine, one-time effort limited by time, budget, resources, and performance specifications designed to meet customer needs”*. The Guide to the Project Management Body of Knowledge (2008:5) defines that *“a project is a temporary endeavor undertaken to create a unique product, service, or result.”* van der Waldt & Knipe (2006) defined that a project is an unrepeated activity that has the following characteristics:

- It is objective-orientated;
- It has certain restrictions, e.g. limited resources;
- The result is quantifiable;
- It brings about change.

There are many other definitions for project management, however most definitions are very similar.

Project management is described by Duncan (1996:6) as: *“project management is the application of knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project”*. Project management is defined by Brown (2006:3) as: *“the set of management techniques applied, to enable the integrated management of the performance, time, cost and human relations frameworks pertaining to a project, to achieve the goal(s) of the project”*.

Project management has many definitions, but the following definitions appear to express the central meaning of project management:

“Project management is the gathering of the best available talent to accomplish a specific and complex undertaking within time, cost and / or quality parameters, followed by the disbanding of the team upon completion of the undertaking” (Hodgetts, 1979:392).

“Project management is the planning, organizing, directing, and controlling of company resources for a relatively short-term objective that has been established to

complete specific goals and objectives. Furthermore project management utilizes the systems approach to management by having functional personnel (the vertical hierarchy) assigned to a specific project (the horizontal hierarchy)” (Kerzner 2009:4).

The difference between operations/programmes and projects is that projects are impermanent and unique, whereas operations/programmes are on-going and repetitive. Programmes normally consist of project(s) and have a longer life cycle than projects. The usual project phases of need identification, conceptualisation, scoping, planning, implementation / execution, monitoring, evaluation and control, commissioning, and close-out – are described by Van der Waldt & Knipe, (2006:66-86). The Housing Project Manager should possess the knowledge skills to manage within all these project phases.

Greenfield Rosahn & Goldfeld (1937:vi) says *“it is hoped that, in the course of time, experienced managers of public housing will be available to render advice during construction of new developments and to help train other managers”*

8.2.1 JOB DESCRIPTION

There are several different job descriptions for project managers. This depends on the specific employment position for the project manager and what the specialization of the hiring firm is.

Managers are expected to handle all aspects of this role (such as receiving, processing and disseminating information) skilfully and make sensible decisions based on the available information.

“Management is defined as an art, because there is no single management solution for all management challenges. Managers have to learn to work within the limits of uncertainties and risks.” (Van Wyk, 2009:180)

According to Birkhead (in Van Wyk, 2009:199) with reference to Brown and Crawford, the background of current project management lies with engineering and construction. He also states that, although general management provides a foundation for project management, it also requires different competencies, because it is impermanent, a unique responsibility, and has a fixed start and finish.

Lester (2007) defines a project manager as: *"The individual who has the responsibility, authority and accountability assigned to him or her to safely achieve the project objectives within agreed time, cost and performance/quality criteria."*

The project manager is held accountable for the project and should be completely dedicated to achieving the goals of the project. The project manager oversees the planning and control of costs, schedules, work tasks and coordinates the efforts across all of the involved functional areas. The project manager plays a central role to enable the project participants to work as a team. The project manager is sometimes the only person who sees the big picture. Nicholas & Steyn (2008) mentioned that *"The project manager's prime role is to integrate everything and everybody to accomplish these goals"*.

Swanepoel & De Beer (1998:50-56) describe the following regarding community development project management:

- The project management organization should be able to work together with others and link their knowledge. They should also have administrators who respond quickly and creatively to changes.
- The project management organization should be an educational organization and adapt in advance.
- The project managers should be skilled to act as the facilitators and enable the connections of people with resources, knowledge and experience.
- Community development projects establish communication with the communities and then identification of the need, acknowledging, isolating and describing it.

8.2.2 ROLES AND RESPONSIBILITIES

The nine knowledge areas of project management, as defined in the Guide to the Project Management Body of Knowledge (PMBOK, 2008), used by the Project Management Institute internationally, reflect the essential roles of project managers:

- Project Integration Management
- Project Scope Management
- Project Time Management

- Project Cost Management
- Project Quality Management
- Project Human Resource Management
- Project Communication Management
- Project Risk Management
- Project Procurement Management

However the *Guide of the PMBOK* is not enough, there are knowledge-based skills beyond the competencies defined in the PMBOK. These skill requirements are developed in the work environment, however numerous amounts of general requirements can be assumed that apply to almost all educated workers (Davidson Frame, 1999:60).

The role of a project manager is similar to that of a general manager, which involves the planning, organizing, leading and controlling of resources to achieve the objectives of the project (in terms of time, cost and quality) (Kerzner, 1992:4-13).

Cusworth & Franks (1998:80) indicate that the management roles correlate positively with the management positions as follows:

- the most important roles at junior management level are task-related roles;
- the most important roles at middle management level are people-related roles; and
- most important roles at senior management level are self-development roles and knowledge.

A competent project manager should have the following characteristics as identified by Davidson Frame (1999:46-48):

- be a results-oriented, can-do individual.
- have a mind for details.
- possess a strong commitment to the project.
- be aware of the organization's goals.
- be politically aware.
- be cost conscious.
- understand business basics.

- be capable of understanding the needs of staff, customers, and management.
- be capable of coping with ambiguity, setbacks, and disappointments.
- possess good negotiation skills
- possess the appropriate technical skills to do his or her job.

However no individual would score perfectly in each of these desirable traits, for each individual has his or her strengths and weaknesses.

The qualification of a successful project manager falls into four categories (Nicholas & Steyn, 2008):

- **Behavioural Skills:** Needs strong interpersonal skills and behavioural skills. Must understand personalities, attitudes and characteristics of other people. Must be sensitive to human frailties, needs and greed, and must be able to resolve conflict and manage stress.
- **General Business Skills:** Must understand the organization, the business and general management. Must be able to translate business requirements into system and project requirements.
- **Personal Characteristics:** Must be able to work in situations where there are constraint deadlines, great uncertainty, start-ups and closeouts, and constants change in goals and at the same time must gain the trust, respect and confidence of the team.
- **Technical Skills:** To make informed decisions the project manager must be able to grasp the technical aspects of the project. Although the project managers rarely do any technical analysis themselves, they must be qualified to make technical judgement and capable of technical analysis and integration.

Davidson Frame (1999:79-95) identifies the people management skills required for the soft side of project management. This includes:

- The need for social skills
- The importance of interpersonal intelligence in project management
 - The need for empathy in dealing with customers
 - The need for empathy in dealing with project team members
 - The need for empathy in dealing with management

- The importance of intrapersonal intelligence in project management
 - Developing intrapersonal skills and empathy
 - Understanding your own strengths and weaknesses
- Specific project management social competencies
 - Teamwork skills
 - Political skills
 - Diversity skills
 - Communication skills
 - Listening skills

The interpersonal skills of a project manager are defined in the Guide to the Project Management Body of Knowledge (2008) as follows: "Project managers accomplish work through the project team and other stakeholders. Effective project managers acquire a balance of technical, interpersonal, and conceptual skills that help them analyse situations and interact appropriately. The important interpersonal skills are:

- Leadership
- Team building
- Motivation
- Communication
- Influencing
- Decision making
- Political and cultural awareness
- Negotiation

While there are additional interpersonal skills that project managers use, the appropriate use of these skills assists the project manager in effectively managing the project."

There are several more sources that identified similar roles and responsibilities of a project manager. This includes sources such as, Gray & Larson (2006:332), Honadle & VanSant (1985:103-111), Nicholas & Steyn (2008).

8.2.3 PROJECT MANAGEMENT BODIES

There are several different project management bodies to consider when describing the roles of a project manager as a profession.

- SACPCMP (South African Council for Project and Construction Management Professionals)

The SACPCMP was established to control Construction Management and Construction Project Management Professionals. Their vision is to develop and establish world class performance in the Construction Project Management and Construction Management Professions. Their mission is to ensure professionalism in the Construction Project Management and Construction Management practice (SACPCMP Mission Statement, 2011).

- PMSA (Project Management South Africa)

Project Management South Africa was formerly known as Project Management Institute of South Africa (PMISA). *“The drive to create PMSA came from a need for a cross sector forum for practitioners to meet and work together and for a national body to work with local organisations and the South African government in developing effective project management within South Africa.”* (PMSA Profile, 2011)

- PMI (Project Management Institute)

The PMI is based in the United States and is globally recognized. For PMI to stay up to date with global development, requires the training and certification of project managers who improve business outcomes and who follow the same standards (PMI - About Us, 2008).

- APM (Association for Project Management)

The Association for Project Management is based in the United Kingdom and is devoted to developing and promoting project and programme management. The

mission statement of the APM is “*to develop and promote the professional disciplines of project and programme management for the public benefit*” (About APM, 2011)

The fundamentals of a general project manager are now discussed and have set a foundation from which the role and responsibilities of a Housing Project Manager can evolve.

8.3 HOUSING PROJECT MANAGEMENT

This section provides the roles and responsibilities of a Housing Project Manager as well as a job description. This section focuses on the additional features that are required from a project manager in order to manage housing projects as a Housing Project Manager.

Chapters 3 to 6 clarify the need for sufficient project management at the development phase of housing, and the need for housing managers to possess project management knowledge and skills. Housing projects have advanced to such an extent that project managers within housing projects can no longer only practiced on the basis of these roles alone, and should acquire the additional housing management skill sets.

Housing Project Managers should manage the processes that bring about the improvement in the well-being of the community, and should achieve a development management role in the housing sector, especially in the public housing sector and in the NGO sector. Development management as well as the actual implementation should be managed and executed at local level in consultation with the beneficiary communities. Housing Project Managers would certainly have a significant development management role to fulfil.

8.3.1 JOB DESCRIPTION

Several different job descriptions of a Housing Project Manager are provided. One of the reasons for the different job descriptions are that the role as Housing Project Manager has not yet been completely defined. Another reason for the different job descriptions is that the role of Housing Project Manager evolves over time. Also, the roles and responsibilities of Housing Project Managers from third world countries differ from that of first world countries. The following international job description of a Housing Development Project Manager is chosen because of the accurate job description for a Housing Project Manager in South Africa.

The job description of the Housing Development Project Manager is:

“The Housing Development Project Manager’s primary responsibilities include but are not limited to fulfilling the overall technical aspects involved in the development of affordable residential communities. These aspects include initial feasibility analysis, acquisition, design, financing and entitlements; coordination with construction staff in the plan check and construction stage, and coordination of start-up operations with Property Management and/or Homeownership Department staff. Under the general direction of the Director or Housing Development, the Project Manager is expected to exercise a high level of independent judgment in the conduct of business responsibility with minimal supervision.” (Job description - Housing Development Project Manager. n.d.)

In the view of Hopkins (in Van Wyk, 2009:202):

- The emphasis in project management should be on simplicity and economy.
- In physical development projects, executed by means of the self-help approach, project managers should act as a link between self-help builders and local authorities.
- Project managers should be conversant with all technical aspects and they should be strongly committed and motivated towards community development.

These views repeat the interdisciplinary nature of the attributes that a Housing Project Manager should possess.

The purpose of the Housing Project Manager is to organize and manage programs with grants, rehabilitation, and neighbourhood development.

8.3.2 DUTIES AND RESPONSIBILITIES

There are numerous different roles and responsibilities identified for a Housing Project Manager, most of which are literature findings, although some of the roles and responsibilities are obtained from conducting interviews and seminars. Through combining these roles and responsibilities, a stronger Housing Project Manager description can be provided in order to educate civil engineers towards housing project management.

The basic principles of housing management according to Jammie (1968:595 – 612) included:

1. Rent collection
 - a) Rent collection as a basic function of management
 - b) Home visits and contracts with tenants
 - c) Attend to non-payment of rent and social disorganization;
2. advancement of harmonious community living, advice and material assistance and cultivation of a sense of responsibility;
3. repairs and maintenance to housing units;
4. maintenance of standards of construction; and
5. selection of tenants and allocation of houses.

Since 1968, housing management has changed in developing countries (as described in chapter 2) and international guidelines have influenced the approach to housing for South Africa. (Van Wyk, 2009:219)

Van Wyk (2009:224) provided the definition of the different HMPs (as in chapter 4), for the following management roles which are similar to that of the Housing Project Manager. These responsibilities would contribute significantly to resolving the objectives of this study. The Housing Project Manager is located in the physical development department and mainly contributes towards physical development process management. A summary of roles and responsibilities of housing management professionals is given in Table 27.

Identifying roles and responsibilities for a Housing Project Manager in first world countries would contribute to identifying the specific roles and responsibilities for a Housing Project Manager in third world countries (developing countries).

There are several similar job descriptions that provide the roles and responsibilities of a Housing Project Manager. City of Austin (City of Austin - Housing Project Manager, 2004) and Burbank Housing Development Cooperation (Job description - Housing Development Project Manager, n.d.) provide the roles and responsibilities from an international view. These national (third world) and international (first world) description of the roles and

responsibilities of a Housing Project Manager would benefit the assembling of the different courses required for the postgraduate curricula proposal in chapter 9.

Table 27: A Summary of roles and responsibilities of some of the HMP (Van Wyk, 2009:223-224)

DEVELOPMENT MANAGEMENT ROLES	PROJECT MANAGEMENT ROLES	HOUSING CONSULTANT ROLES	PHYSICAL DEVELOPMENT PROCESS MANAGEMENT ROLES
Policy analysis; Identify change; Manage change; Decisions; Supervise implementation; Control resources; Manage internal affairs; Public development; Human relations; Achieve objectives; Plan city; Create urban system; Leadership; Political role; Entrepreneur; Public interest;	Manage housing delivery; Planning; Organizing; Directing; Controlling resources; Integration; Scope; Quality; Human resources; Communication; Risk procurement; Reports; Coordinate & integrate activities; Familiar with operation lines; Knowledge of technologies; Accountability; Define ethics, norms & values Leadership.	Build up expertise Scan market for services; Network in sector; Market services; Tender on invitation or as negotiated; Liaise with client Accept consulting contract / appointment; Render advice and services; Ensure client satisfaction; Follow-up evaluation with client.	Coordinate role players; Manage processes; Identify housing opportunity; Feasibility study; Financing; Oversee design and construction; Marketing and maintenance; Project and finance proposals; Admin tender procedures; Select professionals and contractors; Allocate contracts and duties.

8.3.3 KNOWLEDGE AREAS, SKILL SETS AND ATTRIBUTES

The different knowledge areas, skills and attributes required for a Housing Project Manager is identified in this section. There are different national and international descriptions provided.

The following three descriptions are provided from Kuhn (2011), Crofton (1997) and van Wyk (2009), and these descriptions are derived from empirical findings within South Africa.

KUHN (2011)

Kuhn (2011) performed a study on the qualities of a good Housing Project Manager. He identified the several fields of knowledge and the necessary attributes for a Housing Project Manager, which are listed in two groups below:

The eight fields of knowledge as identified are listed below:

Table 28: Appropriate knowledge for a Housing Project Manager (Kuhn, 2011)

1. *Housing: What is it?*
 - Peoples Housing “Project’s”/Processes
 - Social/Gap Housing
 - RDP/BNG Product Houses
2. *Building Science:*
 - Materials, properties and technology
 - Quantities
 - Workmanship
3. *How to manage a city:*
 - Economy
 - Land Values
 - Housing Market
 - Real estate projects
4. *People and Political skills*
5. *Organizational Theory:* The understanding of your position within the organization and your role and responsibilities
6. *Numeracy:* The understanding of figures, quantities, etc...
7. *Law:* The understanding of property and administrative law, and the understanding of how the processes of establishing a township need to be managed from the beginning to the end.
8. *Technology:* The understanding of maps and building plans, and the understanding of modern data systems.

The second field of knowledge “building science” is identified by Kuhn to have a high priority for a Housing Project Manager. This field, and several others in this list, already form part of the knowledge fields of civil engineers. It follows that by educating civil engineers towards housing project management would significantly benefit the housing industry.

The necessary attributes for a Housing Project Manager identified by Kuhn (2011) are listed below:

Table 29: The necessary attributes/qualities identified of a good Housing Project Manager (Kuhn, 2011)

- Need to be Pragmatic
- Communication Skills
- Politically Astute
- Environmentally sensitive
- Interact with beneficiaries
- Business Intuition
- Sceptical/Critical
- Curious

CROFTON (1997)

Crofton performed the study to identify the housing education and training needs at local government level. Crofton (1997:214-218) identified the required knowledge, skills and attitudes for Housing Officials at local authority, as listed below:

Seven knowledge need areas:

1. Role clarification between officials and councillors as well as the other tiers of government
2. Understanding local authority administrative procedures
3. Understanding the new housing policy
4. To be updated with the latest technical knowledge in the housing field
5. Understanding housing financial management aspects
6. Understanding the community development process (holistic development)
7. Understanding some of the legal aspects relating to housing

Six skills need areas:

1. Correspondence skills
2. Communication skills
3. Management skills

4. Training skills
5. 'Enabling' skills
6. Conflict-resolution, negotiation, facilitation and consultation skills

Three attitude need areas:

1. Addressing the attitude within the community
2. The attitude of the housing officials towards the community
3. The attitude of the housing officials with regards to their housing function

VAN WYK (2009)

Van Wyk (2009) identified that the basic knowledge base for a housing manager as well as a Housing Project Manager should be composed mainly from the following disciplines:

- Business management: This is to provide the concepts, roles and all aspects of management.
- Public and development management: This is to provide a development perspective on housing and a perspective on public service working environment.
- Sociology: This is to provide an understanding of the sociological environment.
- Housing Management: This is in which education is synthesized and applied to housing and related subjects, such as (the focus only on housing processes):
 - the global, national, provincial and local housing environments;
 - policy making;
 - housing finance;
 - housing legislation;
 - housing technology;
 - construction management;
 - process management;
 - strategic management;
 - programme; and

- project management.

Other essential knowledge should be drawn from the following disciplines:

- Industrial Psychology / Personnel Management
- The planning and built environment professions and topography
- Commercial and Property Law
- Overview to Social Work
- Economics and the financial sector

These knowledge areas, skills and attributes are the outcome goals of the proposed curricula in chapter 9.

8.4 EXISTING HOUSING MANAGEMENT EDUCATIONAL COURSES AND CURRICULA

Housing Management is still a relatively new concept as a profession in South Africa and the request for housing management is also relatively low, hence the fact that there are not many educational courses and curricula available in South Africa.

8.4.1 BACHELOR OF THE BUILT ENVIRONMENT IN HUMAN SETTLEMENT DEVELOPMENT

The Nelson Mandela Metropolitan University (NMMU) offers an undergraduate housing management training programme, culminating in a Bachelor of the Built Environment in Human Settlement Development (BBE [HSD]). The purpose of the programme is to develop effective human settlement managers and practitioners to possess housing management knowledge and skills. The programme consists of four years of training towards housing management.

Table 30: The courses of the Bachelor of the Built Environment in Human Settlement development programme (Van Wyk, 2011c)

YEAR 1
<p>Human Settlement Management 1:</p> <ul style="list-style-type: none"> • Basic Principles and Theory of Human Settlement Development and Management. • Theory of Land Use Planning and Management. <p>Public Administration 1:</p> <ul style="list-style-type: none"> • Constitutional Framework for Public Administration. • Regional, Metropolitan and Local Administration. • Administration for Development. <p>Economics 1:</p> <ul style="list-style-type: none"> • Introduction to Micro Economics. • Introduction to Macro Economics. <p>Computer Literacy 1.</p> <p>Accounting 1:</p> <ul style="list-style-type: none"> • Accounting 101. • Accounting (Special) 102. <p>Sociology:</p> <ul style="list-style-type: none"> • Social and Environmental Issues. <p>Political Studies:</p> <ul style="list-style-type: none"> • Political Issues, theories and concepts. <p>Local Government Law.</p>
YEAR 2
<p>Human Settlement Management 2:</p> <ul style="list-style-type: none"> • Land Use Management and Environment. • Communities and Human Resources. • Housing Finance and Administration. <p>Public Administration 2:</p>

- Public Policy Process, Procedures and Methods.
- Public Financing and Control.

House Design and Services 2:

- House Design and Related Building Standards.
- Services and Layouts of Residential Development.

Business Management 1:

- Introduction to Business Management and Entrepreneurship.
- Introduction to the Business Functions.

Commercial Law 1.

Sociology:

- Sociology of Development.

YEAR 3

Human Settlement Management 3:

- Development Management Theory.
- Human Settlement Policies and Implementation.
- Social Housing Facilitation and Management.

Public Administration 3:

- Local Government and Administration.
- Local and Regional Resource Management.
- Public Management Techniques.
- Project Management.

House Construction and Maintenance 3:

- House Construction and Maintenance.

Construction Management (Special) 3:

- Introduction to the Built Environment and Construction Management (Special).
- Construction Contracts.

YEAR 4

Human Settlement Management 4:

- Sustainable Human Settlement and Urban Infrastructure Management.
- Economic Development and Environmental Impact Management.
- Advanced Project Management Applications.

Integrated Development Management 4:

- IDP Theory, Policies and Practice.
- GIS for Human Settlement Managers.

Property Development and Management 4:

- Property Development and Management.
- Property Investment and Finance.
- Property Economics and Valuation.

Statutory Property Law 2:

- Human Settlement, Property and Related Acts.

Statistical Methods for Behavioural Sciences.

Research Methodology and Treatise:

- Research Methodology and Proposal.
- Research Project and Treatise (preferably linked to a Practical Project / Case Study).

8.4.2 HOUSING MANAGEMENT TRAINING PROGRAMME

NMMU also offers a postgraduate curriculum mainly to the PDoH-delegates and candidates with a Human Settlement Development-degree. This housing management programme started in 2008 and is up to unit standards and outcomes of that of the Human Settlement Development-degree. The following twelve modules are offered over a two year period:

Table 31: NMMU's Housing Management Training Programme (Van Wyk, 2011b)

NMMU's Housing Management Training Programme

- Housing Management (The Introductory course)
- Project Management for Public Managers
- Construction Management for Public Managers
- Land Policy, Legislation and Planning
- Human Settlement Planning: An Integrated Development Approach
- Residential Property Management
- Property Development
- Property Finance
- Property Investment
- Property Valuation
- Property Law (Including Conveyance and Administration of Deeds)
- Housing Finance and Administration

8.4.3 INTRODUCTION TO UPGRADING INFORMAL SETTLEMENTS

The following course is not currently available as it is still in development, as the Department of Human Settlement is working on the professionalization of Human Settlements education and practice. The Nelson Mandela Metropolitan University (NMMU) and University of South Africa (UNISA) are developing curricula for professional Degrees in Human Settlements, which are expected to be offered in 2013 (Kwakweni, 2011)

The course is entitled: *Introduction to upgrading informal settlements*, and is structured around the following twelve modules:

Table 32: Introduction to upgrading informal settlements (Kwakweni, 2011)

1. The case for upgrading
2. South Africa upgrading policies and programmes
3. A programmatic approach and planning an upgrading project
4. Participatory planning approaches
5. Improving infrastructure and basic services
6. Financing a slum upgrading project
7. Land regularisation in upgrading
8. Improving shelter conditions
9. Social dimensions of upgrading
10. Sustaining improvements
11. Urban management and informal settlement upgrading
12. Institutional arrangements

8.5 CONCLUSION

The need for Housing Managers to succeed in their jobs as described is critical to the success of housing projects. The job description of a Housing Project Manager is very specific and requires a specific educational background. However, there are limited educational resources available in South Africa to educate applicants towards housing management.

Through executing the method of this study, several findings were made:

- Skill sets of a Housing Project Manager was identified as well as his job description
- South African housing management education programmes were identified

With the focus on Housing Project Managers and not Housing Managers, and with the roles identified, a proper educational curriculum can be composed. Limited educational programmes are available with the sole purpose of educating applicants towards achieving the title of Housing Project Manager in South Africa.

Chapter 9 proposes an educational curriculum to educate and train civil engineers towards Housing Management as Housing Project Managers. The purpose of the Housing Project Manager is described in Chapter 8.3 and is located in the development phase of housing projects. This identifies the need that Housing Project Managers should possess a strong civil engineering background.

Within the built environment, generally the civil engineer adopts the title of project manager. Chapter 8.2 provides the description of a project manager, thus indicating the skill sets already possessed by a civil engineer as identified by Guide to the Project Management Body of Knowledge (PMBOK, 2008), Davidson Frame (1999:46-48), Nicholas & Steyn, (2008). However a Housing Project Manager should also possess all these skill sets. Table 33 provides a list of additional knowledge areas, skills and attributes required for the housing environment and skills already possessed by civil engineers.

Table 33: Identified responsibilities in Chapter 8

Civil engineering knowledge areas and skills	Housing Management knowledge areas and attributes
<p>Knowledge areas</p> <ol style="list-style-type: none"> 1. Building Science 2. Numeracy: The understanding of figures, quantities, etc... 3. Technology: The understanding of maps and building plans, and the understanding of modern data systems. 4. Construction management 	<p>Knowledge areas</p> <ol style="list-style-type: none"> 1. <i>Housing: What is it?</i> 2. <i>How to manage a city:</i> 3. <i>People and Political skills</i> 4. <i>Organizational Theory:</i> The understanding of your position within the organization and your role and responsibilities 5. <i>Law:</i> The understanding of property and administrative law, and the

Civil engineering knowledge areas and skills	Housing Management knowledge areas and attributes
<p>5. Project management</p> <p>Skills</p> <p>6. Correspondence skills</p> <p>7. Communication skills</p> <p>8. Management skills</p> <p>9. Training skills</p> <p>10. 'Enabling' skills</p> <p>11. Conflict-resolution, negotiation, facilitation and consultation skills</p>	<p>understanding of how the processes of establishing a township need to be managed from the beginning to the end.</p> <p>6. Role clarification between officials and councilors as well as the other tiers of government</p> <p>7. Understanding local authority administrative procedures</p> <p>8. Understanding the new housing policy</p> <p>9. To be updated with the latest technical knowledge in the housing field</p> <p>10. Understanding housing financial management aspects</p> <p>11. Understanding the community development process (holistic development)</p> <p>12. Understanding some of the legal aspects relating to housing</p> <p>Attributes</p> <p>13. Addressing the attitude within the community</p> <p>14. The attitude of the housing officials towards the community</p> <p>15. The attitude of the housing officials with regards to their housing function</p>

Table 33 shows that no additional skills are required for a Housing Project Manager, however numerous additional knowledge areas are required. Table 33 would contribute significantly to composing the framework of the postgraduate curricula in chapter 9.

CHAPTER NINE

PROPOSAL OF THE POSTGRADUATE CURRICULUM FRAMEWORK

9.1 INTRODUCTION

This Chapter proposes the framework of a postgraduate curriculum, which focuses on the education of a civil engineer towards housing project management. The proposed curriculum will be suitable for any of two postgraduate qualifications which are currently offered at Stellenbosch University in Civil Engineering.

The primary objective of the aforementioned curriculum is to support skills development and to improve the knowledge areas and attributes of a civil engineer in the professional role as Housing Project Manager. This in turn will contribute to the success of the implementation of housing development projects. Furthermore, it will prepare civil engineers not only in the field of housing management but also for the execution phase of construction projects in general.

Figure 26 shows the structure of this chapter.

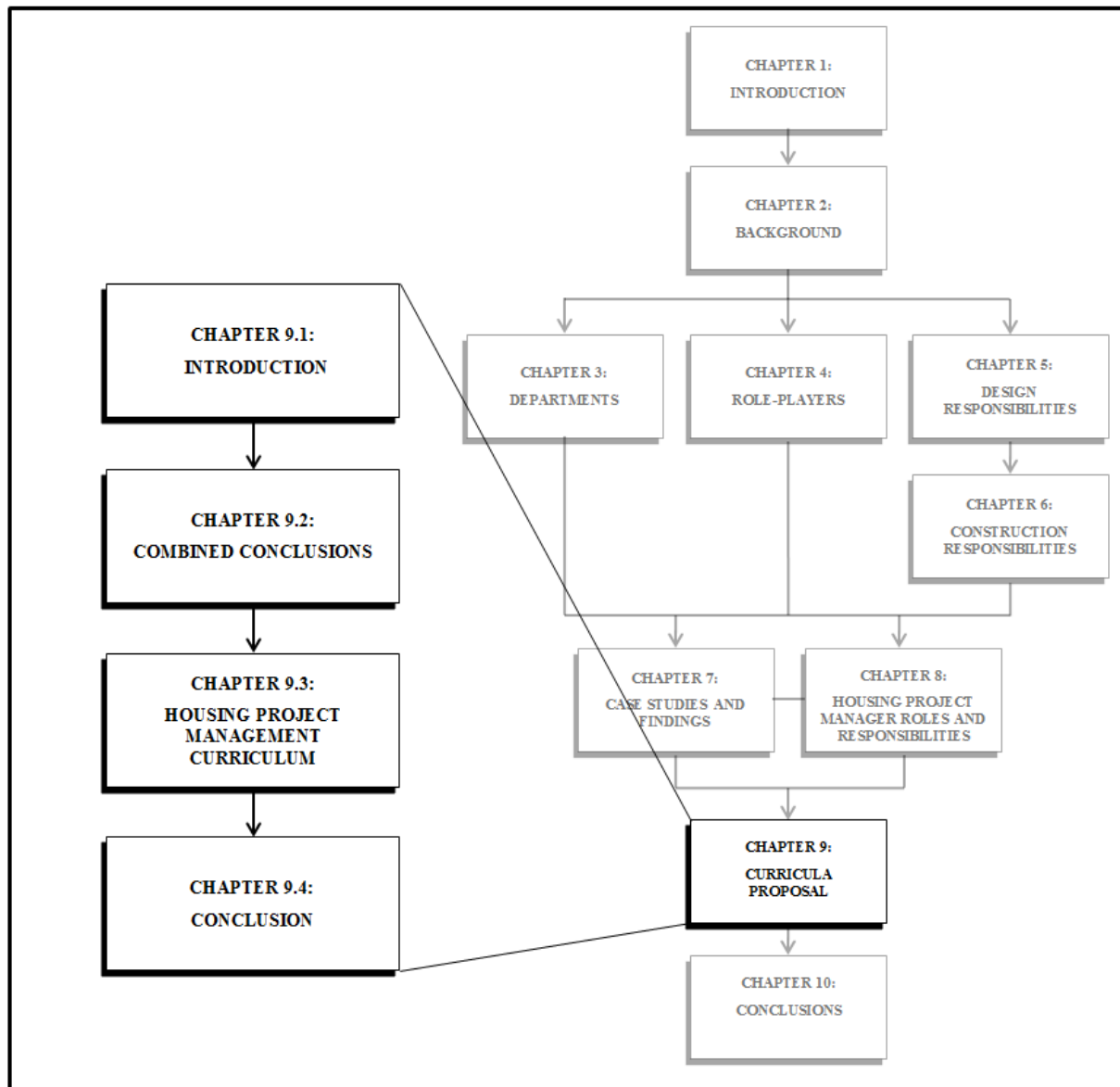


Figure 26: Overview of Chapter 9

The findings in Chapter 7 and Chapter 8 should be considered when reading this chapter, because the knowledge areas as identified are essential components of the skill sets required by HPM. An outline off the curriculum containing the different courses and their outcomes are given in this chapter.

Based on the literature review in Chapters 3 to 6, the Housing Project Manager should be able to function at all levels of management and should contribute to:

- Policy and strategy development,

- Process and system management,
- Programme management,
- Project management, with the importance on the management of housing and community development processes,
- Functional management (administrative, financial, personnel and operational).

Although the other Housing Management Professional roles are different from that of the Housing Project Manager: there are core responsibilities that include management and co-operation between all these professions. The Housing Project Manager should also be able to function in all the different sectors (e.g. private sector, public sector, NGO sector, financial sector, housing association sector). Although the role of the Housing Project Manager lies at the operational and middle management levels, he should be able to contribute to the senior management and top management levels. This could also depend on the organization in which the Housing Project Manager works, as well as the position he holds within the organization. A typical position of the Housing Project Manager as considered in this study is shown in Figure 27. The role and responsibilities of the Housing Project Manager considers the direct communication between the built environment professionals and the housing management professionals and should be educated to address aspects of importance in both fields, as shown in Figure 27 and indicated in Table 34.

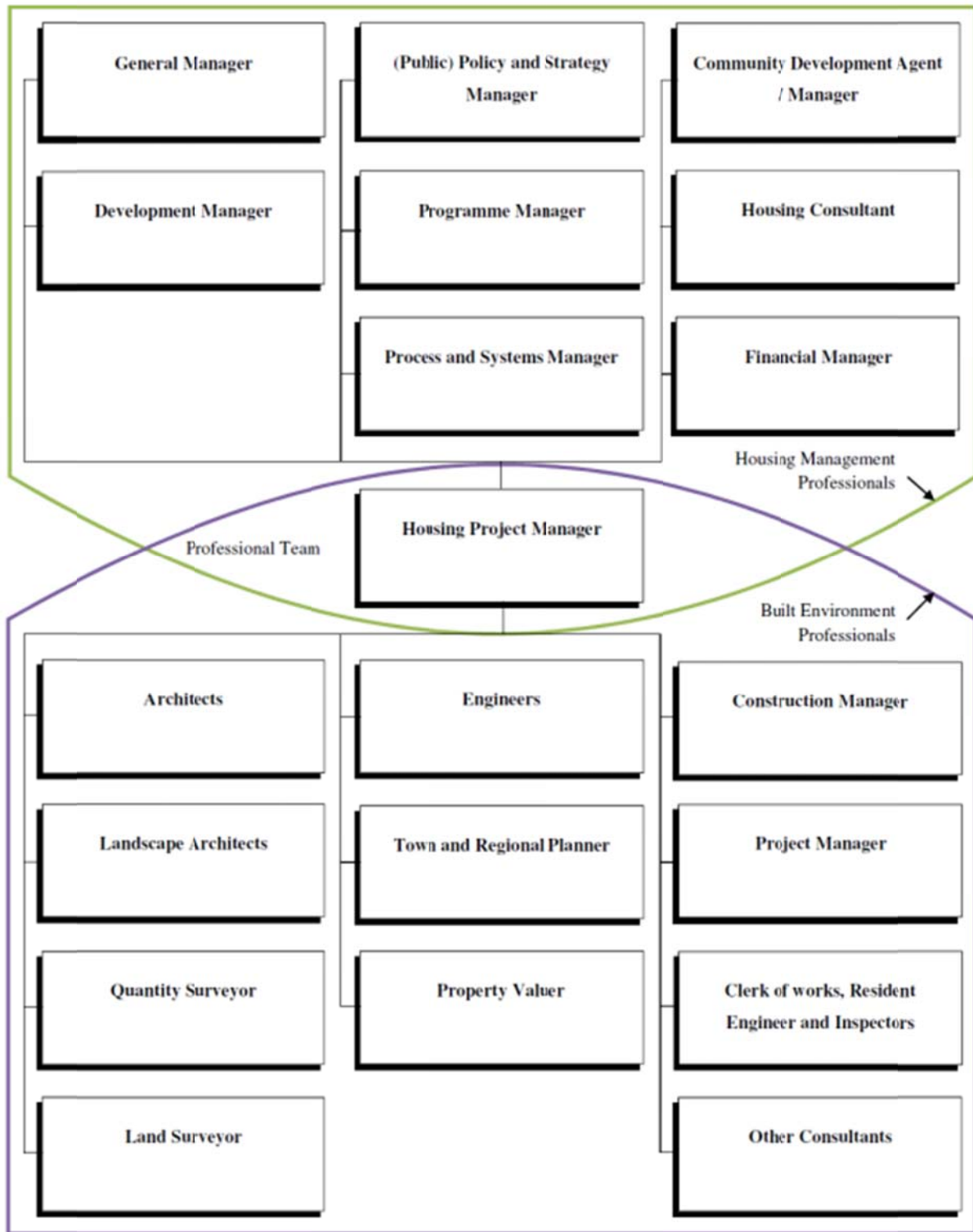


Figure 27: Relationship of the Housing Project Manager regarding the Housing Management Professionals and Built Environment Professionals

9.2 THE REQUIRED RESPONSIBILITIES FOR THE HOUSING PROJECT MANAGER

Table 34 combines and presents the conclusions from Chapter 3 to Chapter 8. It shows, the most important civil engineering responsibilities and identifies housing management responsibilities for housing projects. Table 34 is the combination of the ‘Identified responsibilities’ tables in the conclusions of chapter 3 to 8. The responsibilities listed in Table 34 are linked to specific courses that are clarified in section 9.3.5.

Figure 28 shows the meaning of the individual numbers in each row of Table 34. The figure also shows the meaning of the characters at each responsibility.

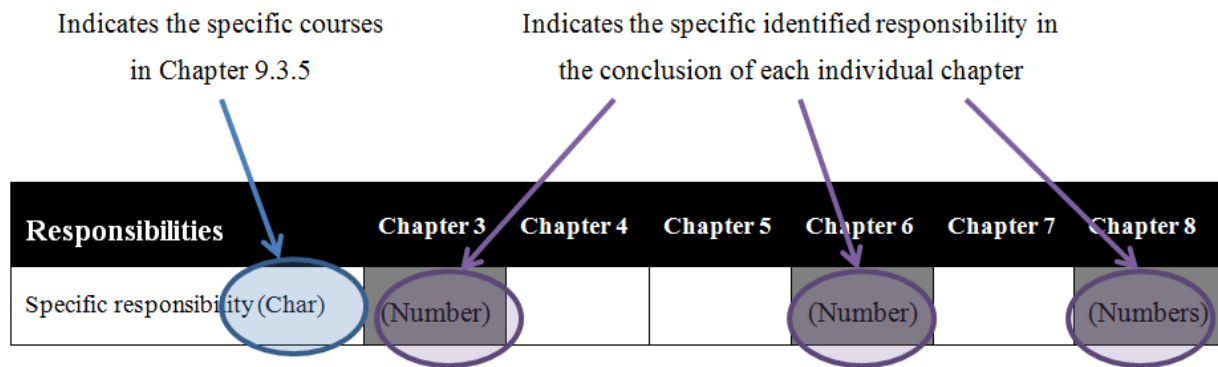


Figure 28: Description of Table 34

The identified responsibilities are shown in Table 34.

Table 34: Identified responsibilities for the Housing Project Manager

Responsibilities	Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 8
Civil Engineering						
The roles of the design consultant (A,B,I)	(1)			(5)		(1,2,3)
The roles of the construction contractor (A,B,I)	(2)			(6)		(1,2,3)
The roles and responsibilities of the Built Environment professional team (B,I)		(1)				(1,2,3,4)

Responsibilities	Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 8
The impact of the different Design and Service responsibilities (J, I)			(1)			
Maintenance specifications (I)			(2)		(11)	
Different stages of any project (B,I)				(1)		
Time management (scheduling) (B,D)				(2)	(1,12)	(8)
Cost management (B,C)				(3)	(1,12)	(8)
Quality management (B,I)				(4)		(8)
Communication management (B,E,K)				(7)	(1,14,12)	(6,7)
Interpersonal skills (K,B) Influencing Decision making Political and cultural awareness Negotiation					(2)	(10,11)
General business skills (K) Customer focus Administrative skills Soft skills (e.g. Empathy)					(3)	
Leadership development (K)					(4)	
Needs assessment (J)					(5)	
Disaster management (B)					(6)	
Safety and health (G,H,K)					(7)	
Ethics (H,K)					(8)	
Project management (B)					(13)	(5)
Town planning (A,F,J)					(10)	
People skills (E,K)					(16)	

Responsibilities	Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 8
Conflict resolution (E,K)					(15)	
Housing Management						
Housing Policies (A,G,H)	(1)			(3)	(1)	(1,2,3,8,11)
Housing Processes (A,F,G,J)	(2)			(4)	(9)	(1,2,7)
Housing Strategies (A,G)	(6)		(1)	(1)		
Housing Laws (A,H)	(5)				(3,4)	(5,12)
The roles of the different departmental/sector role players (A,E,I,J)	(3)			(5)	(5)	(6)
The roles and responsibilities of the Housing Management Professionals (A,E,J)	(4)	(1)		(5)		(6,15)
Community related responsibilities (E,J)					(2)	(11,13,14)
The location of the Housing Project Manager (A)		(2)			(6)	(4)
Considering all the different Housing Design and Service responsibilities (A,J)			(2)			
Time management (housing process scheduling) (D)				(2)		
Technical housing (B,D,F,I)			(3)		(8)	(9)
Housing financial management (C)						(10)
Communication between different role players (technical coordination) (E)	(7)	(4)				

Table 34 was used to assemble the outline of the proposed courses presented in section 9.3.5. The identified responsibilities shown in Table 34 are therefore incorporated into the proposed courses where necessary.

9.3 PROPOSED HOUSING PROJECT MANAGEMENT CURRICULUM

9.3.1 MENG AND PDE QUALIFICATIONS

The Department of Civil Engineering at Stellenbosch University offers three different postgraduate programmes apart from PhD studies. These are a research-based Masters degree programme (called the research based MEng as from 2012), a course-based Masters degree programme (called the structured MEng as from 2012) and a postgraduate diploma in engineering (PDE). The latter two qualifications would be ideal to be used as basis for the field of specialization in educating housing project managers. These two qualifications are described below:

- **Structured MEng:** The Structured MEng is a course based Masters degree programme which requires a combination of course modules and a research project. A set of course modules is compiled to provide a coherent curriculum of advanced studies in a field of specialisation. The academic weight of the curriculum is 180 SAQA credits of which 120 credits consists of course modules, and 60 credits are obtained through a research project.
- **PDE:** The PDE is a postgraduate programme which leads to the qualification Postgraduate Diploma in Engineering. The PDE-programme comprises a minimum of 120 SAQA credits in the form of coursework.

These two postgraduate programmes normally consist of 8 course modules to make up the 120 SAQA credits (Department of Civil Engineering, 2011:14-19).

The Higher Education Qualification Framework (HQEF) (Act No. 101 of 1997:26-27) also provides a full description of the two suggested postgraduate programmes.

9.3.2 REQUIREMENTS OF THE CURRICULUM

Figure 29 shows the admission model for postgraduate programmes at the University of Stellenbosch. To qualify for the new postgraduate programme the qualifications of the learner should meet the terms of the admission model.

The curriculum framework revolves around the PDE and MEng programmes; this allows for BTech and BEng students to apply for the proposed curriculum. The PDE and MEng programmes are course based and allows for more courses than the MScEng programme.

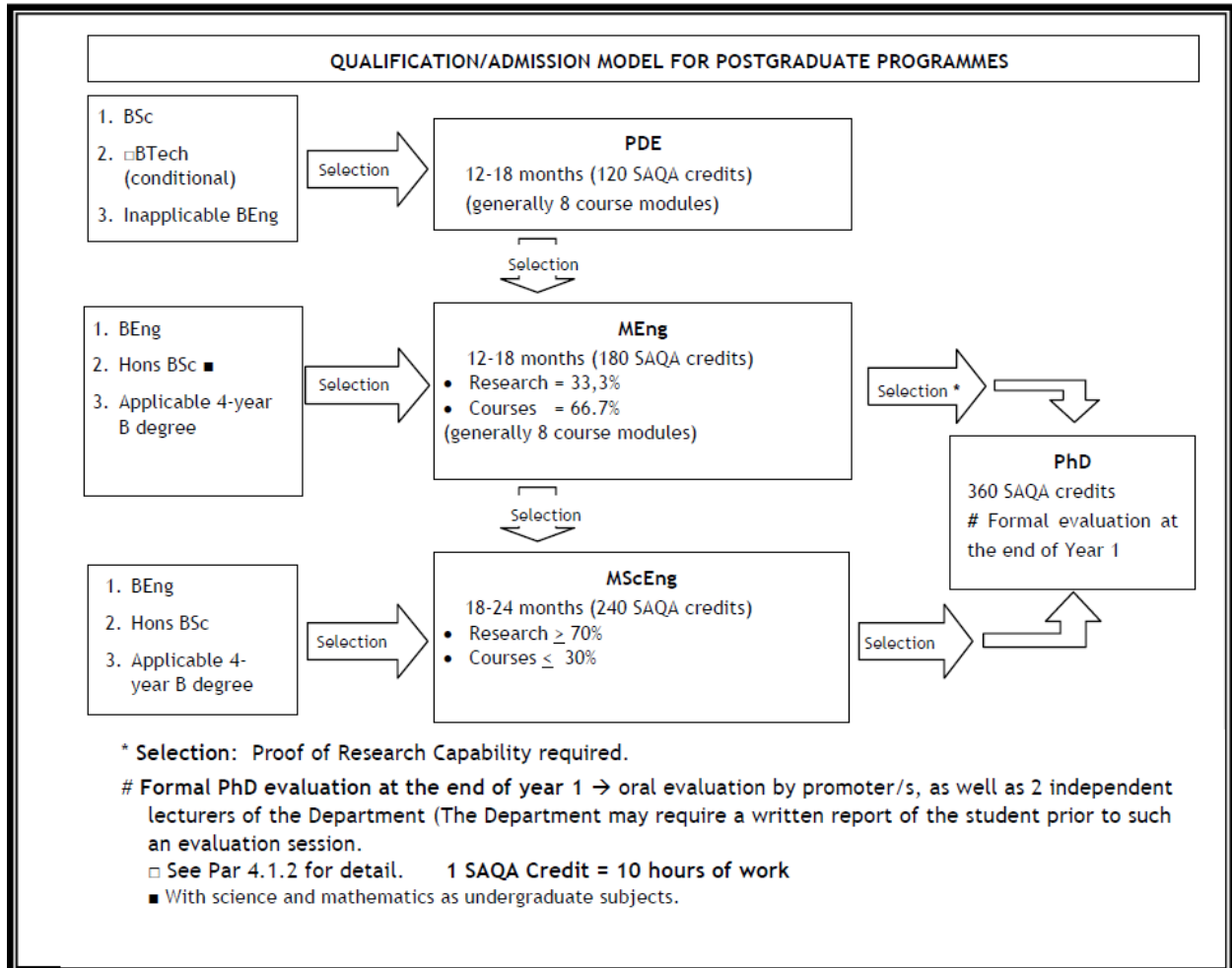


Figure 29: Qualification/Admission Model for Postgraduate Programmes (Department of Civil Engineering, 2011)

The Department of Civil engineering brochure provides all the information regarding the admission specifications. (Department of Civil Engineering, 2011)

9.3.3 MENG AND PDE LEVEL OF EDUCATION

The curriculum is presented at a postgraduate level of education to educate civil engineers towards the management of housing projects.

Van Wyk (2011c) mentioned in the SAHF conference that human settlements are a multi-cross disciplinary field of study (development studies, geography, public management, built environment, etc.) and that among all these disciplines, the most are surrounding the built environment.

UN-Habitat**, (Van Wyk, 2011c) states that:

“...the need for strengthening of local planning and management capacities has been emphasized in virtually all major intergovernmental agreements...”

9.3.4 TERMS OF MANAGEMENT BODIES

The curriculum should meet the standards set out by the South African Qualifications Authority to be considered as a MEng and PDE qualification.

The proposed curriculum should comply with the standards established by the following South African bodies:

- PMSA (Project Management South Africa)
- SACPCMP (South African Council for Project and Construction Management Professionals)

The curriculum should also comply with the requirements of international project management bodies as discussed in Chapter 8.

9.3.5 PROPOSED COURSES

The following eleven knowledge areas are proposed for the framework of the new postgraduate curriculum. These eleven knowledge areas can be reduced to eight postgraduate course modules to match the qualification structure at Stellenbosch University. The exact course modules can be decided upon at a later stage within a separate study.

A. HOUSING MANAGEMENT

This field would contribute as an introduction to housing and to the management involved in housing projects. It will be introducing the following concepts:

- Housing policies and strategies.
- Housing processes and programmes
- Housing departments and role-players
- History of housing
- The location of the Housing Project Manager
- The need for housing in developing countries

These different concepts are considered in the development of the introductory course to housing management. This would allow the student to understand the complexity of housing management and the need for educated Housing Project Managers.

B. PROJECT MANAGEMENT

This field would focus on the management responsibilities of a project manager as defined in the Guide to the Project Management Body of Knowledge (PMBOK, 2008). It will be introducing the following concepts:

- Project Integration Management
- Project Scope Management
- Project Time Management
- Project Cost Management
- Project Quality Management
- Project Human Resource Management
- Project Communication Management
- Project Risk Management
- Project Procurement Management

These different management aspects would be discussed in relation to the built environment and the housing environment. It is possible that many of these concepts already form part of some postgraduate modules in civil engineering at Stellenbosch University. The action will basically entail studying the contents of existing courses and incorporating such a module in the offering of housing project management.

C. FINANCIAL MANAGEMENT

This field would focus on the financial aspects of managing construction projects, specifically the financial aspects of housing projects. It will be introducing the following concepts:

- Accounting
- Economics (Micro Economics and Macro Economics)
- Principals of Finance
- Investments

These financial management aspects would be discussed in relation to the built environment and the housing environment. It is possible that many of these concepts already form part of some postgraduate modules in civil engineering at Stellenbosch University. The action will basically entail studying the contents of existing courses and incorporating such a module in the offering of housing project management.

D. PROJECT SCHEDULING

This field would focus on all aspects regarding project scheduling, specifically scheduling of housing projects. It will be introducing the following concepts:

- The basic principles of time management
- Develop Project scheduling
- Project schedules interacting with housing programmes

These are the aspects considered with regard to the scheduling of housing projects. It is possible that many of these concepts already form part of some postgraduate modules in civil engineering at Stellenbosch University. The action will basically entail studying the contents of existing courses and incorporating such a module in the offering of housing project management.

E. COMMUNICATION MANAGEMENT

This field would focus on the importance of proper communication between project team members, across cultural boundaries, between the different departments regarding housing

projects (e.g. private sector, public sector, NGO sector, financial sector, housing association sector), as discussed in Chapter 3 and 4. It will be introducing the following concepts:

- Managing community communications
- Managing stakeholder communications
- Communication skills

It has been concluded in Chapter 7 and 8 that the communication between the different role players is essential to the success of housing projects.

F. PROPERTY DEVELOPMENT AND MANAGEMENT

This field would focus on the property development and property management of the housing project. It will be introducing the following concepts:

- Property finance and economics
- Property development
- Property management
- Property valuation and investment

The Housing Project Manager should be educated in these aspects in order to manage housing projects effectively.

G. HOUSING PROCESSES, STRATEGIES, POLICIES AND PROGRAMMES

This field would focus on the different processes, strategies, policies and programmes concerning the management of housing projects. It will be introducing the following concepts:

- Housing processes (listed in chapter 3.2)
- Housing strategies
- Housing subsidy programmes
- Housing programmes

There are many different housing processes, strategies and programmes that affect the roles and responsibilities of the Housing Project Manager.

H. HOUSING LEGISLATION AND ACTS

This field would focus on the housing policies and laws and all legal aspects of housing projects. It will be introducing the following concepts:

- Property law
- Property law conveyance
- Administration of Deeds
- Local Government law
- The Housing acts
- Housing policies
- Political issues

I. CONSTRUCTION AND MAINTENANCE / UPGRADING OF URBAN DEVELOPMENT

This field would focus on the construction management and maintenance of urban development, specifically focusing on the roles and responsibilities of the Housing Project Manager. It will be introducing the following concepts:

- Built environment and construction management
- Construction contracts
- Construction phases
- Design specifications of housing projects
- Upgrading policies and programmes
- Land regulations for upgrading
- Upgrading of slums
- Upgrading services and conditions

The field would contribute to the overlapping relationship that exists between construction management and housing management.

J. HUMAN SETTLEMENT MANAGEMENT

This field would focus on the management of human settlements in order to improve the conditions of the human settlements and so the Housing Project Manager should be aware of the management aspect regarding human settlements. It will be introducing the following concepts:

- Environmental management
- Communities and human resources
- Sustainable human settlements
- Environmental Impact Assessment (EIA)
- Human settlement services

K. HOUSING CASE STUDY WORKSHOP

This field would focus on the development of general project management skill sets and attributes as identified in Chapter 7 and 8. The workshop includes the simulation of several case studies, which would include team tasks as well as individual tasks through incorporating the knowledge and skills gained from the other courses.

Housing development projects tend to cut across departmental boundaries and these projects will involve managers with various social backgrounds and skill sets. Consequently it is necessary that the Housing Project Manager develops team-building and co-ordination skills. Housing projects are multi-disciplinary and there is a need for the Housing Project Manager to develop several general business skills and interpersonal skills as identified in Chapter 7. The most important role of the Housing Project Manager and the entire team is to manage the housing project effectively and efficiently.

The reason for adding the workshop to the list of courses is explained by Coetzee (in Crofton, 1997), that “*one major problem experienced by local authority training is that employees, acquiring skills through training, tend to lose these skills through lack of practice once they return to their work environment*”. This implies that the programme courses must be applied as part of the workshop to demonstrate how the information in the courses are relevant to their work environment. This reflects two critical aspects identified by Crofton (1997:61), (i)

a need for on-going training to strengthen the acquired skills, and (ii) to identify the specific requirements so that training could address the actual needs of the learners.

9.3.6 EXIT LEVEL OUTCOMES

Each field would possess an individual list of outcomes required to fulfil the role of Housing Project Manager. These individual outcomes for each course would be defined as the individual courses are composed.

The outcome of the curriculum provides for the development of skill sets in the areas of business, public and development management. The legislation and technical aspects of the Housing Project Manager are included in the curriculum.

The single most important outcome of this curriculum is to ensure that the civil engineer fulfils the roles and responsibilities of a project manager in the housing environment as described in Chapter 8.

9.3.7 CURRICULUM EVALUATION

After the new curriculum has been implemented, it will be necessary to monitor the students and courses.

The training cycle shown in Figure 30 is described as “... *the process of identifying a performance gap, identifying if training is needed, selecting and preparing appropriate training, carrying out the training and monitoring and evaluating it*” (Anon., 1997b:2 in Crofton, 1997:62)

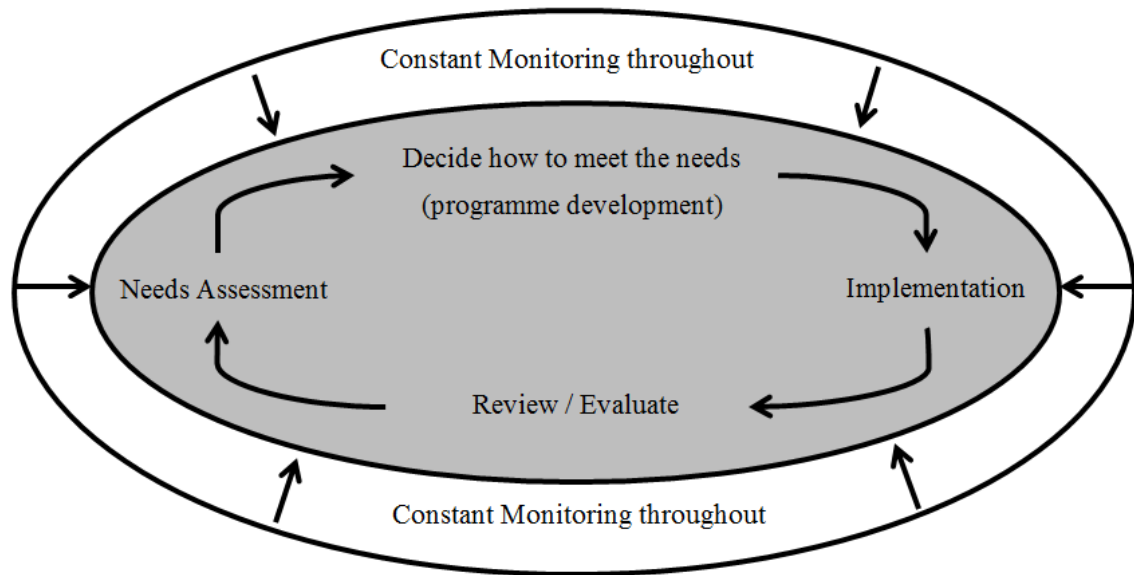


Figure 30: The Training Cycle (Anon., 1997b:2 in Crofton, 1997:62)

9.4 CONCLUSION

After completion of the new postgraduate curriculum, the civil engineer will be able to operate effectively in the housing environment. Civil engineering is a major component of Housing Management. This indicates that both the knowledge areas of the built environment and Housing environment should be incorporated in the postgraduate curriculum.

The conclusive outcome of the postgraduate curriculum is that the learner fulfils the role as a Housing Project Manager in the housing environment. The Housing Project Manager is one of the most important roles in the housing environment and it stands to reason that proper education is necessary to prepare the Housing Project Manager to effectively fulfil his/her professional roles and responsibilities.

This study provides the framework of the required postgraduate curriculum to educate civil engineers towards housing management. A comprehensive description of each course is still required to make this curriculum a reality.

CHAPTER TEN

CONCLUSION AND RECOMMENDATIONS

10.1 CONCLUSION

The vision for housing projects in South Africa has changed significantly since 1994. This is mainly due to the fact that low cost housing is still a new concept in South Africa compared to the leading countries specializing in the housing industry, despite the fact that the NBRI did some research and development in the 1950s and '60s. The housing industry is still evolving, thus creating significant challenges to achieve the housing vision for 2030, as discussed in chapter 3. There are several ways of improving the delivery of houses to achieve the ideal housing vision. This study focuses on the Housing Project Manager as a contribution to improve the process. Defining and emphasizing his key functions and responsibilities would contribute significantly to the long term goals of the vision that the government has for South Africa. The study specifically considers the training of civil engineers to equip them for the role as Housing Project Managers.

In order to focus on the roles and responsibilities of the Housing Project Manager, one has to identify all the subordinate and main roles linked to the Housing Project Manager which include most of the Housing Management Professionals and the Built Environment Professional Team.

The Housing Project Manager is the agent between the municipality and the private sector, and as a result, this position emphasizes the need for a Housing Project Manager to understand all aspects pertaining to the roles and responsibilities of both the Housing Management Professionals within the municipality and the Built Environment professionals. In order for a civil engineer to fulfil this role as a competent Housing Project Manager and to equip him with the skills and knowledge to develop sustainable houses, not only for the destitute, but for the whole of the nation, relevant experience and education becomes inevitable.

The aim of this study is to propose a framework for a postgraduate curriculum in civil engineering. The intention of this curriculum is to educate civil engineers towards housing

management and consequently, provide them with the skill set to be competent and successful Housing Project Managers.

Knowledge is an essential part of competencies. The identified required responsibilities, in chapter 3 to chapter 8, for the Housing Project Manager contribute to the content of the courses. A list is provided of the proposed postgraduate subject areas for civil engineers to be educated towards becoming Housing Project Managers. These identified courses from chapter 9 are:

- Housing Management
- Project Management
- Financial Management
- Project Scheduling
- Communication Management
- Property Development and Management
- Housing Processes, Strategies, Policies and Programmes Management
- Housing Legislations and Acts
- Construction and Maintenance/Upgrading of Urban Development
- Human Settlement Management
- Housing Case Study Workshop

The aforementioned courses will assist the civil engineer to achieve the desired exit level outcome of the curriculum.

It is recognized that the candidates for the course will come from a civil engineering background and will possess civil engineering knowledge, some with technical experience, some with business experience and others with only limited practical experience. It is considered that this qualification be fortified by a unique list of courses to assist the training of civil engineers towards housing management. These courses would be presented by specialists from the housing environment with acquired knowledge and management experience. The proposed curriculum framework in chapter 9 would assist the specialists to develop the content for their specific course, as these developed contents should be sufficient to develop the required competencies for Housing Project Managers.

It is concluded that civil engineers are currently operating and needed in the housing industry. It is essential that such civil engineers obtain the necessary housing management knowledge through the proposed curriculum. Civil engineers working as Housing Project Managers on housing projects will increase productivity and quality, and can contribute to meeting the housing targets of the government. Ultimately, this would assist the housing industry to be more efficient in the execution of their projects.

10.2 RECOMMENDATIONS

This section provides several recommendations for further developing this study.

- To be able to define the role and responsibilities of the Housing Project Manager, more practical information and case studies are required. At present there is limited information available regarding suitable case studies, the access to this type of information is very limited and only a few people are able to access this information. Housing is such a new concept in South Africa compared to the leading countries specializing in the housing industry, with the result that there are not enough properly documented projects with specific management problems.
- There is a lack of management experience in South Africa surrounding low-cost housing projects. This leads to incomplete information and out-of-date information regarding housing projects. The United Kingdom has been providing their citizens with homes successfully for several decades now, and is one of the leading countries in social housing. Studying the role of Housing Project Manager of other leading countries would benefit this study.
- The proposed curriculum framework and modules in chapter 9 should be further investigated and evaluated to provide the complete description of each module to make this curriculum a reality.

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Appendix

APPENDIX A:

QUESTIONNAIRES



University of Stellenbosch

Research Input Form

Dissertation toward an MScEng in Construction and Engineering Management

(Robert Nicolaas Vosloo)

(2011)

Personal Information

Company Name (Optional): _____

You're Name (Optional): _____

Current Position: _____

Your Current Qualifications: _____

Years' Experience: Years @ Current Employer:

Housing Project Manager Related Discussion

From the following lists of Skills, identify the essential skills for a Housing Project Manager.

- Technical Skills / Integrated Management

Scope Management	
Time Management	
Cost Management	
Risk Management	
Human Resource Management	
Communication Management	
Quality Management	
Procurement Management	

- Interpersonal Skills

Leadership	
Team building	
Motivation	
Communication	
Influencing	
Political and cultural awareness	
Decision making	
Negotiation	

- Intrapersonal Skills

Understand one's Strengths and Weaknesses	
Behavioural Skills	
Self-Management	
Human Relations	
Coping Skills (e.g. Conflict, Being Flexible)	

- General Business Skills

Customer Focus	
Administrative Skills	
Product and Technology evaluation expertise	
Soft Skills (e.g. Empathy)	
Business and application expertise	

From the following lists of Skills, identify the Lacking skills of the current Housing Project Manager.

- Technical Skills / Integrated Management

Scope Management	
Time Management	
Cost Management	
Risk Management	
Human Resource Management	
Communication Management	
Quality Management	
Procurement Management	

- Interpersonal Skills

Leadership	
Team building	
Motivation	
Communication	
Influencing	
Political and cultural awareness	
Decision making	
Negotiation	

- Intrapersonal Skills

Understand one's Strengths and Weaknesses	
Behavioural Skills	
Self-Management	
Human Relations	
Coping Skills (e.g. Conflict, Being Flexible)	

- General Business Skills

Customer Focus	
Administrative Skills	
Product and Technology evaluation expertise	
Soft Skills (e.g. Empathy)	
Business and application expertise	

Project management knowledge areas to focus on when educating engineers to towards housing project management

List any additional skills below:

APPENDIX B:

HOUSING PROJECT PROCESS GUIDE

This appendix provides the complete flow diagrams of the following two National Housing Programmes (Housing Project Process Guide, 2009):

- **Figure A:** Integrated Residential Development Programme and Upgrading of Informal Settlements Programme
- **Figure B:** Rural Subsidy: Communal Land Rights

This appendix provides the following schedules:

- **Figure C:** Project Schedule
- **Figure D:** House Construction Schedule





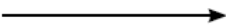

ICON	DESCRIPTION
	This icon signifies that a sub-process would normally be required.
	This icon signifies that a decision is to be made.
	This icon signifies that an action, document or sub-process would be required to complete a specific task.
	This icon signifies the initiation of a specific phase.
	This connector represents the flow process from one activity to another. Black connectors represent the main process flow.
	Coloured connectors contextualises the flow between phases and should not be used as a short-cut procedure.

Figure A: Integrated Residential Development Programme and Upgrading of Informal Settlements Programme

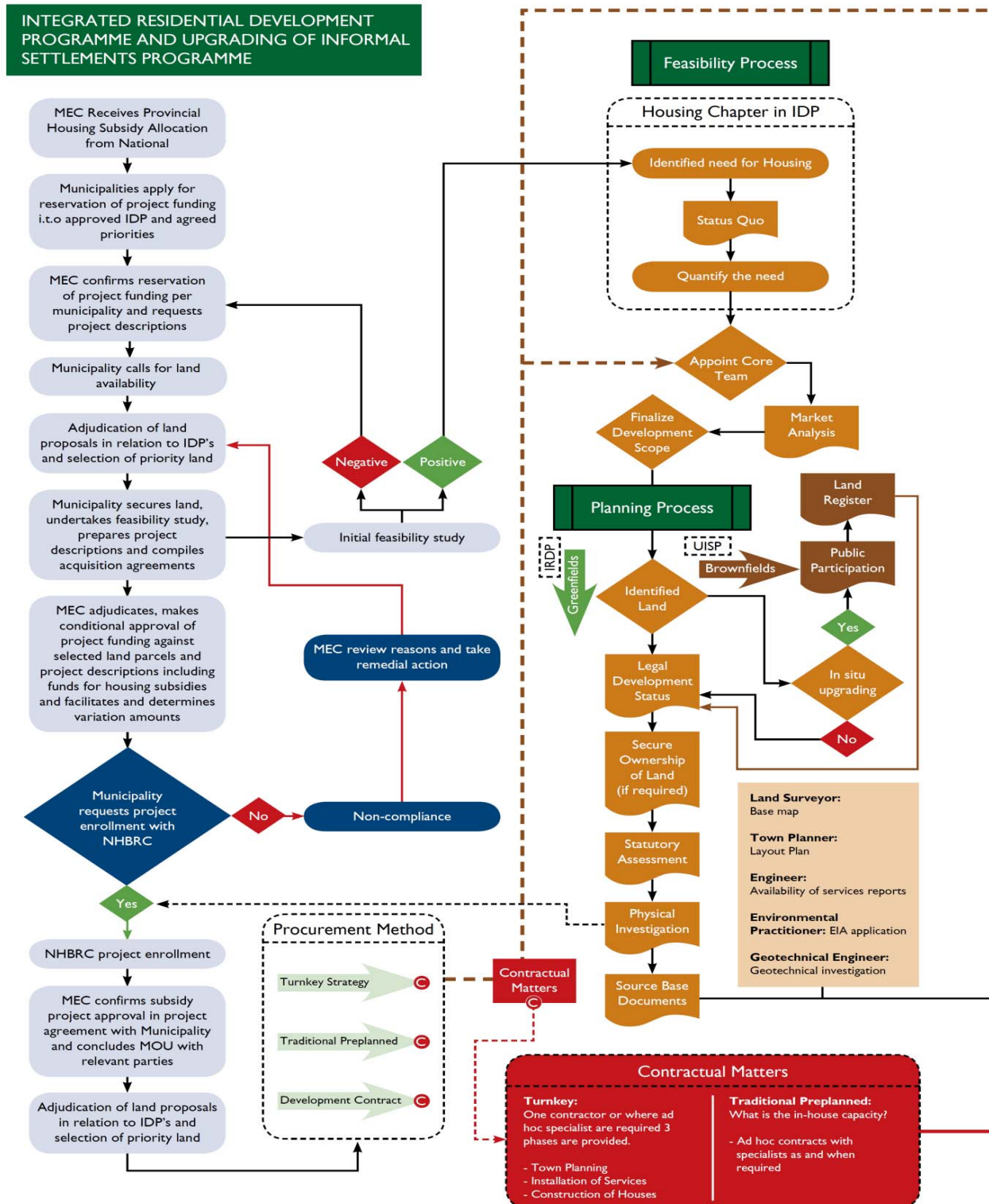


Figure A: Integrated Residential Development Programme and Upgrading of Informal Settlements Programme

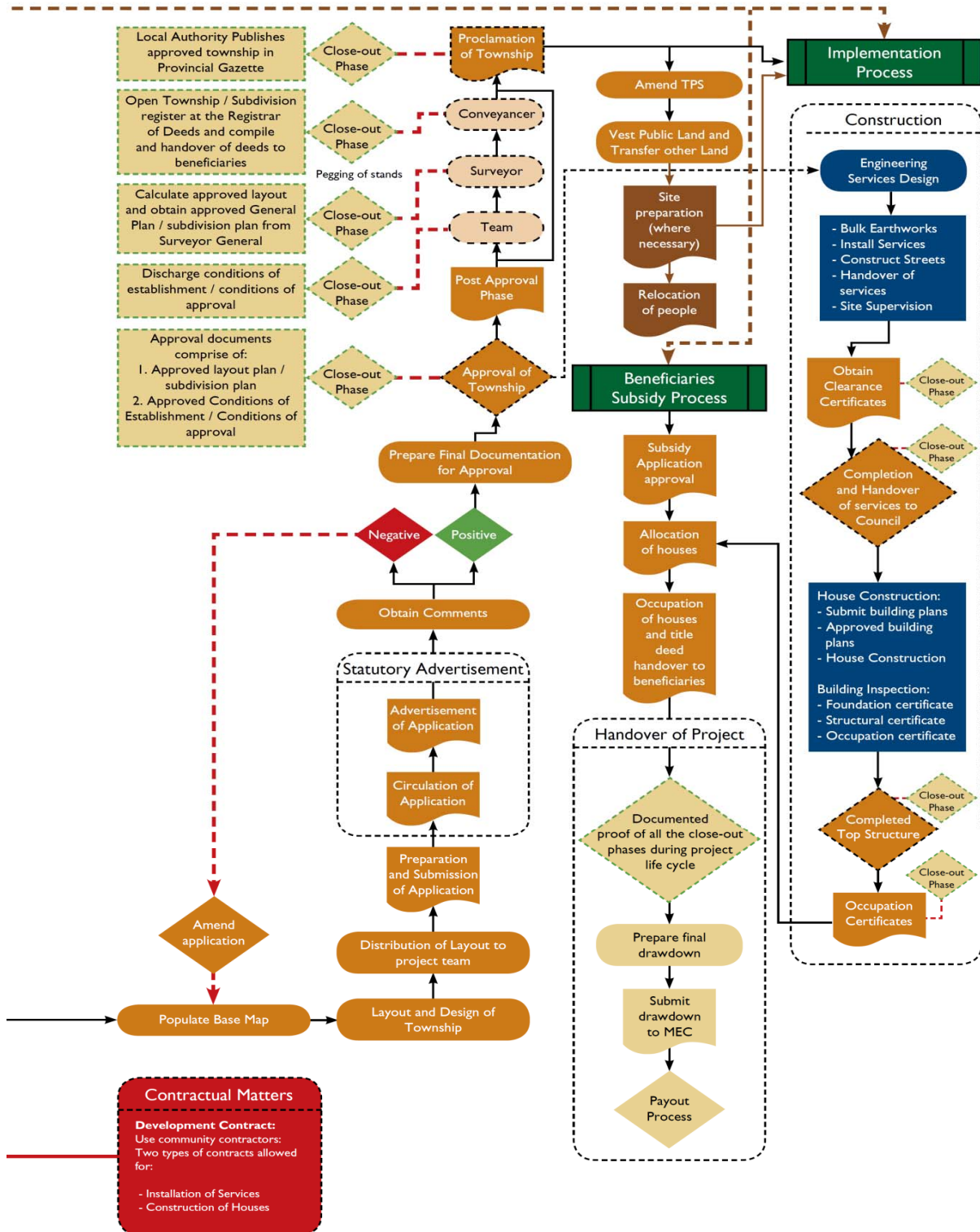


Figure B: Rural Subsidy: Communal Land Rights

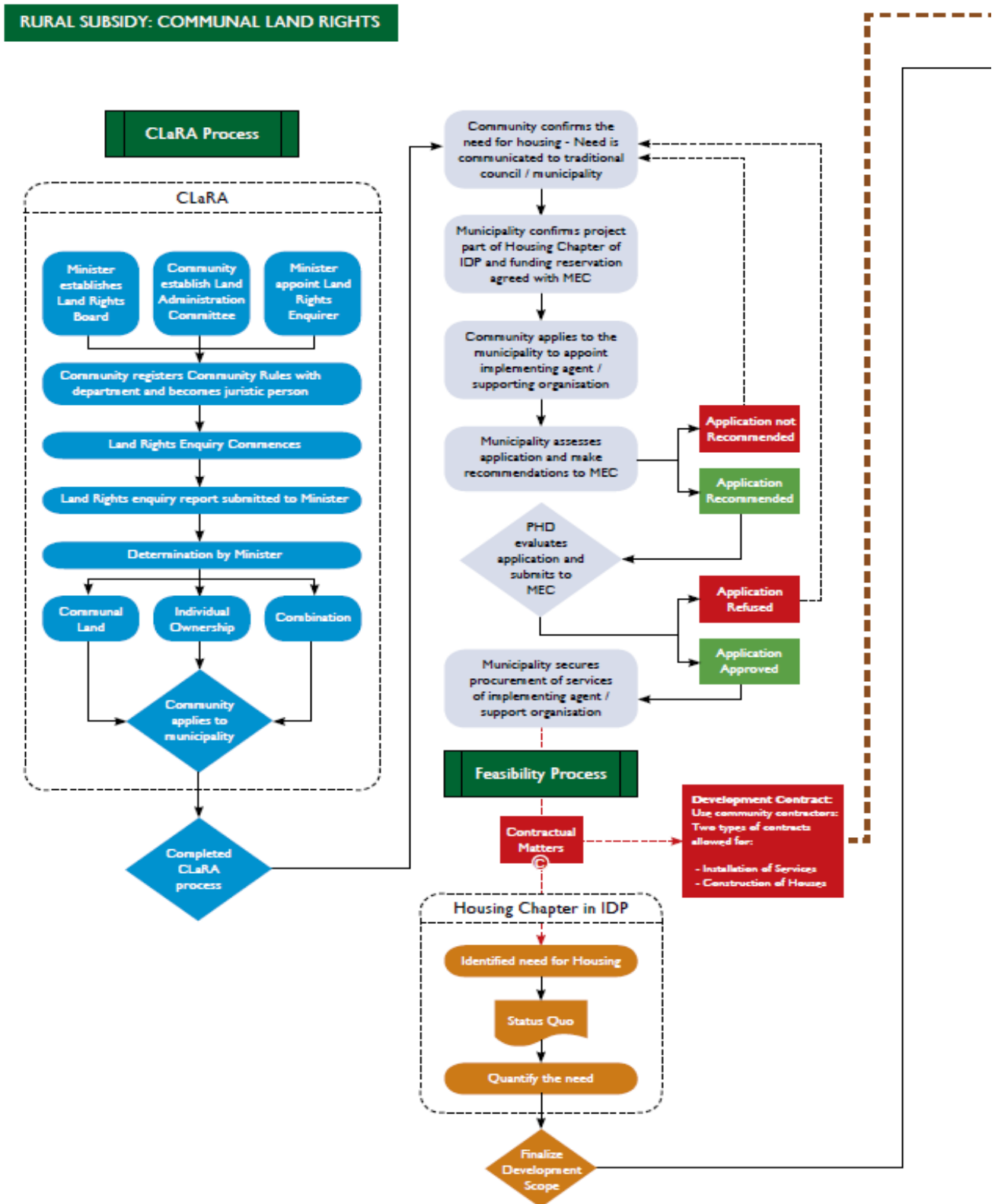
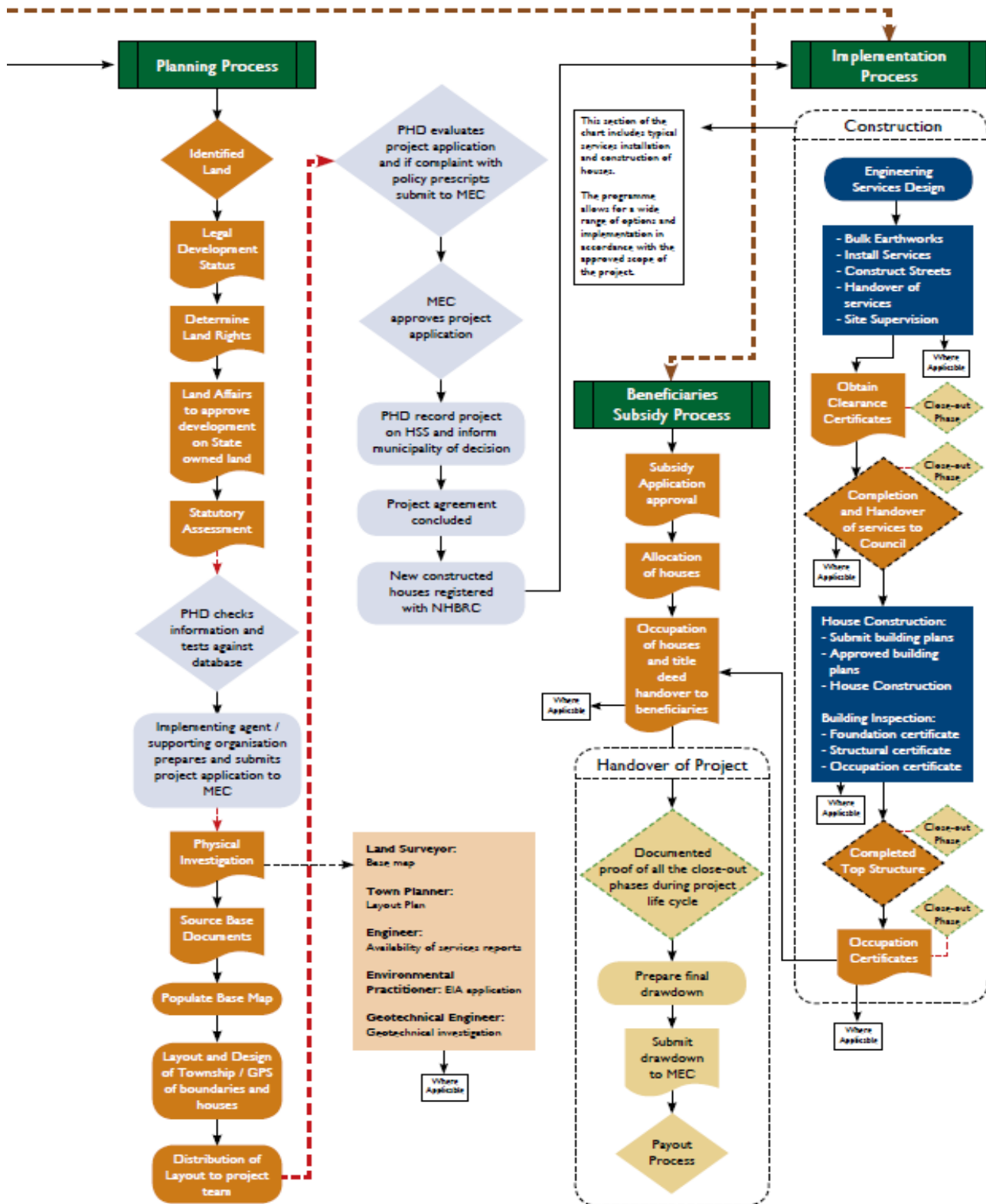


Figure B: Rural Subsidy: Communal Land Rights



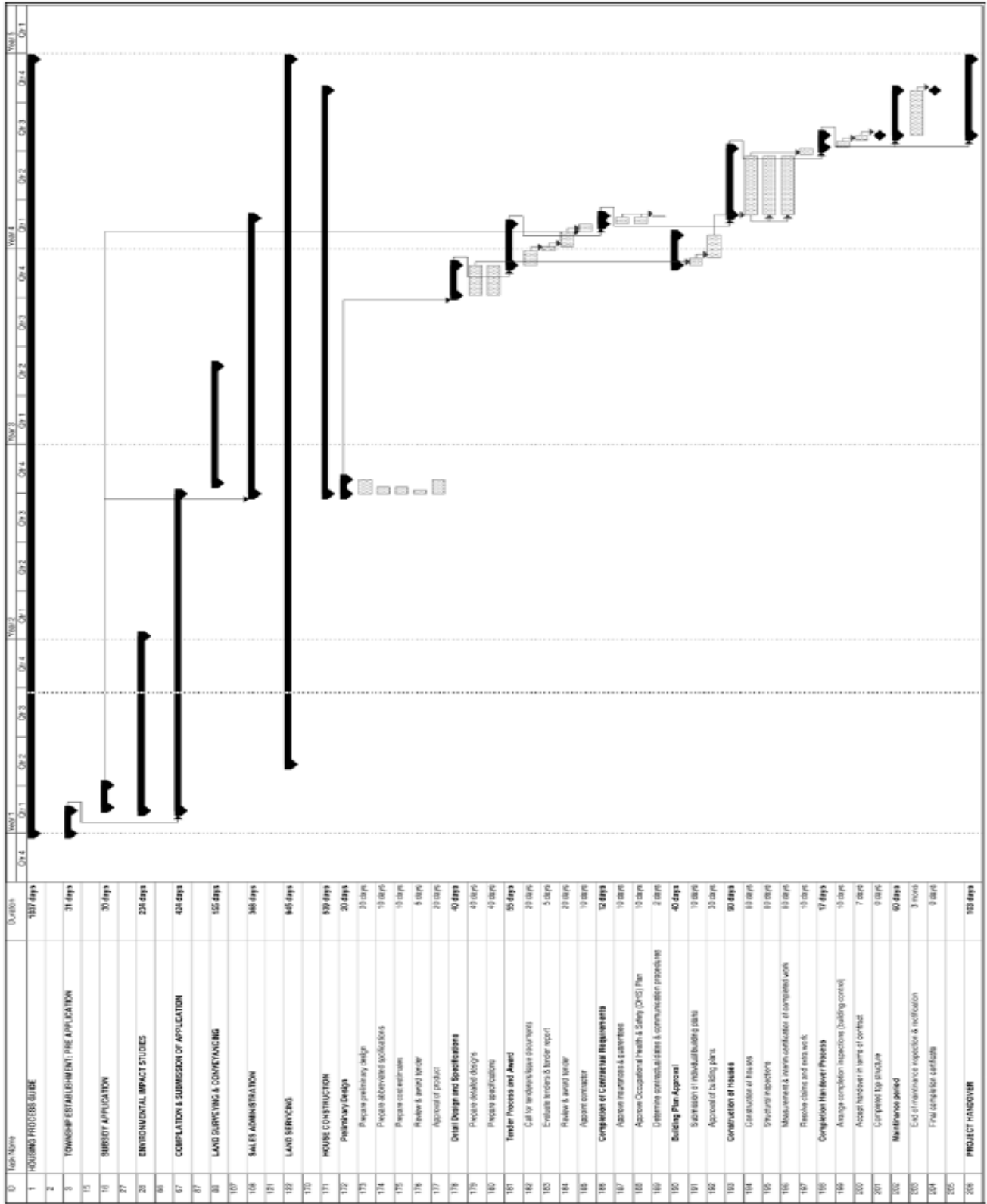


Figure D: House Construction Schedule