

# Social housing with interior public spaces

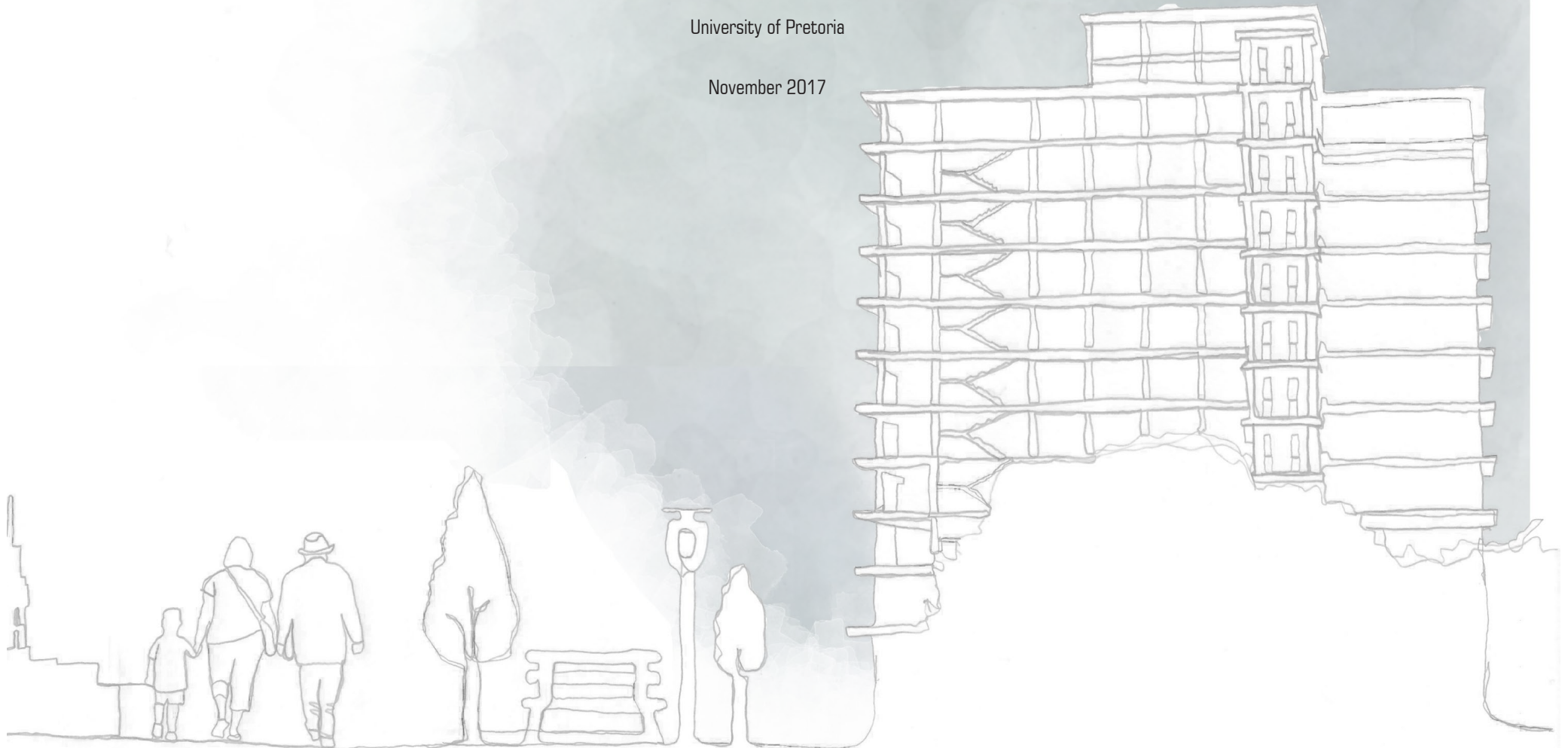
A new typology for the urban context of Pretoria

by Antonette Heijdenrych

Submitted in partial fulfilment of the requirements for the degree  
Master of Interior Architecture (Professional) to the faculty of  
Engineering, Built Environment and Information Technology.

University of Pretoria

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"I'd go hungry, I'd go black and blue  
I'd go crawling down the avenue  
There's nothing that I wouldn't do  
To make you feel my love"

Bob Dylan, *Make you feel my love*

Vir Linda.



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Department of Architecture  
University of Pretoria  
2017

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In accordance with Regulation 4(e) of the General Regulations (G.57) for dissertations and theses, I declare that this dissertation, which I hereby submit for the degree of Masters of Interior Architecture (Professional) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution. I further state that no part of my dissertation has already been, or is currently being, submitted for any such degree, diploma or other qualification.

I further declare that this thesis is substantially my own work. Where reference is made to the works of others, the extent to which that work has been used is indicated and fully acknowledged in the text and list of references.

Antonette Heydenrych

## Project Summary

Dissertation Title	Social housing with interior public spaces: A new typology for the urban context of Pretoria
Project Description	The project is concerned with investigating the role of interior design in the design and development of social housing in the adaptive re-use of an abandoned building in Pretoria CBD. The focus is placed on developing shared public spaces to increase the interaction between residents and create a more fulfilling living environment.
Programme/Type of building	Adaptive re-use to introduce social housing
Site Description	Abandoned men's residence, currently known as Huis Potgieter
Site Location	South Eastern quadrant of Pretoria CBD
Address	268 Normaal Street, Nieu Muckleneuk, Pretoria, Gauteng, South Africa
GPS Coordinates	25°45'37.0"S 28°11'48.6"E
Research Field	Human Settlements and Urbanism
Keywords	Social housing, interior public spaces, public interior, adaptive re-use, urban, inclusive, wayfinding, attachment, identity, appropriation, public space, place-making
Chosen Client	YEAST City Housing, UNISA
Users	Medium Income Social Housing Recipients
Interior Architectural Theoretical Question	How can a spatially integrated social housing typology for the medium income market be developed through the adaptive re-use of urban buildings, with a focus on the interior public spaces?
Interior Architectural Approach	The adaptive re-use of a disused urban building to introduce social housing, with the focus on the public spaces between the units.

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### Abstract

The project proposes the investigation into the adaptive re-use of abandoned and unused buildings in the Pretoria CBD to develop social housing that makes use of existing infrastructure, structures, economic activity and transport networks. This is done as a response to the need for social housing in the medium income market. Most developments for this market are built outside city limits and use precious resources and unnecessary new materials. This project focuses on what is currently known as Huis Potgieter, on the UNISA Sunnyside Campus, as a testing ground to develop theories and approaches that can be used in the development of future developments.

Throughout the research conducted into the project, the residents have been emphasised as the main design informant, specifically by the regulations set out by the national government. Considering the highly user-centred approach as identified by the regulations, it is appropriate to approach it from an interior design knowledgebase.

Looking firstly at the resident's needs, those in similar housing developments and income markets have identified and emphasised the need and importance of shared public spaces.

Other research has confirmed that public spaces are a large contributor to both the social and psychological well-being of the residents.

This project focuses on providing public spaces as integrated areas within the building, interspersed between living units, in an effort to provide comfortable, inclusive, and enjoyable public spaces that encourage a sense of place among the residents.

A design proposal to integrate interior public spaces into the daily lives of the residents was developed. Various public space theories were collated and synthesised to develop a set of theory-based guidelines for use in this and future social housing projects. The project aims to develop a proposal that considers all users in the development, both in their physical needs (in the form of an inclusive design approach), as well as their social and community needs, by providing public spaces that accommodate a wide range of users and activities. To benefit future studies and to contribute to the field of interior design, a new term, interior public spaces, was developed in order to describe the type of public spaces created.

In order to create a strong identity for the building, which

the users can relate and respond to in their own attachment and appropriation, the legibility of the intervention is large focus of the project. To increase the legibility of the building, the building identity – KwilaliCity - was developed to reflect strongly in the public areas of the building to create a common ground for all residents. The intervention ensures accessibility to its wide range of residents by introducing a strong inclusive design component, with a focus on wayfinding. Applying the wayfinding and inclusive approach early in the project allows for an integrated resolution that serves to strengthen the design approach.

The intention that residents are encouraged to develop an attachment to KwilaliCity and their fellow residents is evident in the encouragement to appropriate specific elements in and around their homes, in order to reflect their identities and give them some control over their housing environment.

## Samevatting

Hierdie projek neem voor om die her-gebruik van verlate en ongebruikte geboue in die Pretoria besigheidsdistrik te ondersoek, met die doel om sosiale behuising wat gebruik maak van bestaande infrastruktuur, strukture, ekonomiese aktiwiteit en vervoernetwerke. Die projek het vorendag gekom as 'n reaksie op die nood vir sosiale behuising in die medium-inkomstemark. Ontwikkelings vir hierdie mark word dikwels geplaas buite die stadperke, en gebruik waardevolle hulpbronne en onnodige nuwe material. Die projek fokus op wat tans bekend staan as Huis Potgieter, te vinde op die UNISA Sunnyside-kampus, as 'n toetsarea waar teorieë en benaderings te ondersoek en wat in toekomstige uitbreidings gebruik kan word.

Tydens die navorsing wat afgelê is vir die projek, is die inwoners beklemtoon as die hoof ontwerpinformant, hoofsaaklik deur die regulasies uiteengesit deur die nasionale regering. Met hierdie hoogs gebruiker-geïntereerde benadering, soos geïdentifiseer deur die regulasies, is dit toepaslik om gebruik te maak van die interieurontwerp kennisbasis.

Eerstens word daar gekyk na die inwoners se behoeftes. Inwoners in soortgelyke behuising en inkomstemark het die

behoefte en belangrikheid van gedeelde openbare ruimtes uitgelig en beklemtoon. Verdere navorsing het bevestig dat openbare ruimtes 'n groot bydraende faktor is in die sosiale en sielkundige welstand van die inwoners.

Die projek fokus op die voorsiening van openbare ruimtes as integreerde areas binne die gebou, verweef tussendeur die leefeenhede, in 'n poging om gemaklike, toeganklike, en aangename openbare ruimtes te skep wat 'n gevoel van plek by die inwoners aanwakker.

'n Ontwerpvoorstel om die interieur openbare ruimtes te integreer met die daaglikse lewens van die inwoners is ontwikkel. Verskeie teorieë wat handel oor openbare ruimtes is versamel en saamgevat om 'n stel teorie-gebaseerde riglyne te ontwikkel wat gebruik kan word in hierdie en toekomstige sosiale behuisingskemas. Die projek poog om 'n voorstel te ontwikkel wat alle inwoners in ag neem, beide in hul fisiese behoeftes (in terme van 'n inklusiewe ontwerpbenadering), sowel as hul sosiale en gemeenskapsbehoefte deur inwoners van openbare ruimtes te voorsien wat 'n wye spectrum van gebruikers en aktiwiteite kan akkommodeer. Om toekomstige interieurontwerpstudies te baat, is 'n nuwe term, interieur

openbare ruimtes, ontwikkel om die soort openbare ruimtes, soos geskep in hierdie projek, te beskryf.

Ten einde 'n sterk identiteit te ontwikkel vir die gebou, wat die inwoners in staat sal stel om verband te hou en te reageer daarop deur hul aanhegting en bewilling, is die leesbaarheid van die ingryping 'n groot fokus van die projek. Om die leesbaarheid van die gebou te verbeter, is 'n gebou-identiteit – KwilaliCity – ontwikkel. Dit kom sterk voor in die openbare areas van die gebou om 'n gelyke grondslag vir alle inwoners te skep. Die ingryping verseker die inklusiwiteit vir die wye reeks inwoners deur 'n sterk inklusiewe ontwerpkomponent in te bring, wat fokus op die navigasie en leesbaarheid van die ruimtes. Deur hierdie benadering toe te pas vanaf die begin, maak voorsiening vir 'n geïntegreerde oplossing wat help om die ontwerbenadering te versterk.

Die bedoeling is dat inwoners aangemoedig word om aanhegting met KwilaliCity en hul mede-inwoners, en is aangebring in die aanmoediging om spesifieke elemente om hul eenhede te bewillig, in 'n poging om hul identiteit te weerspieël en bietjie beheer te gee oor hul huislike omgewing.

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## Social housing with interior public spaces

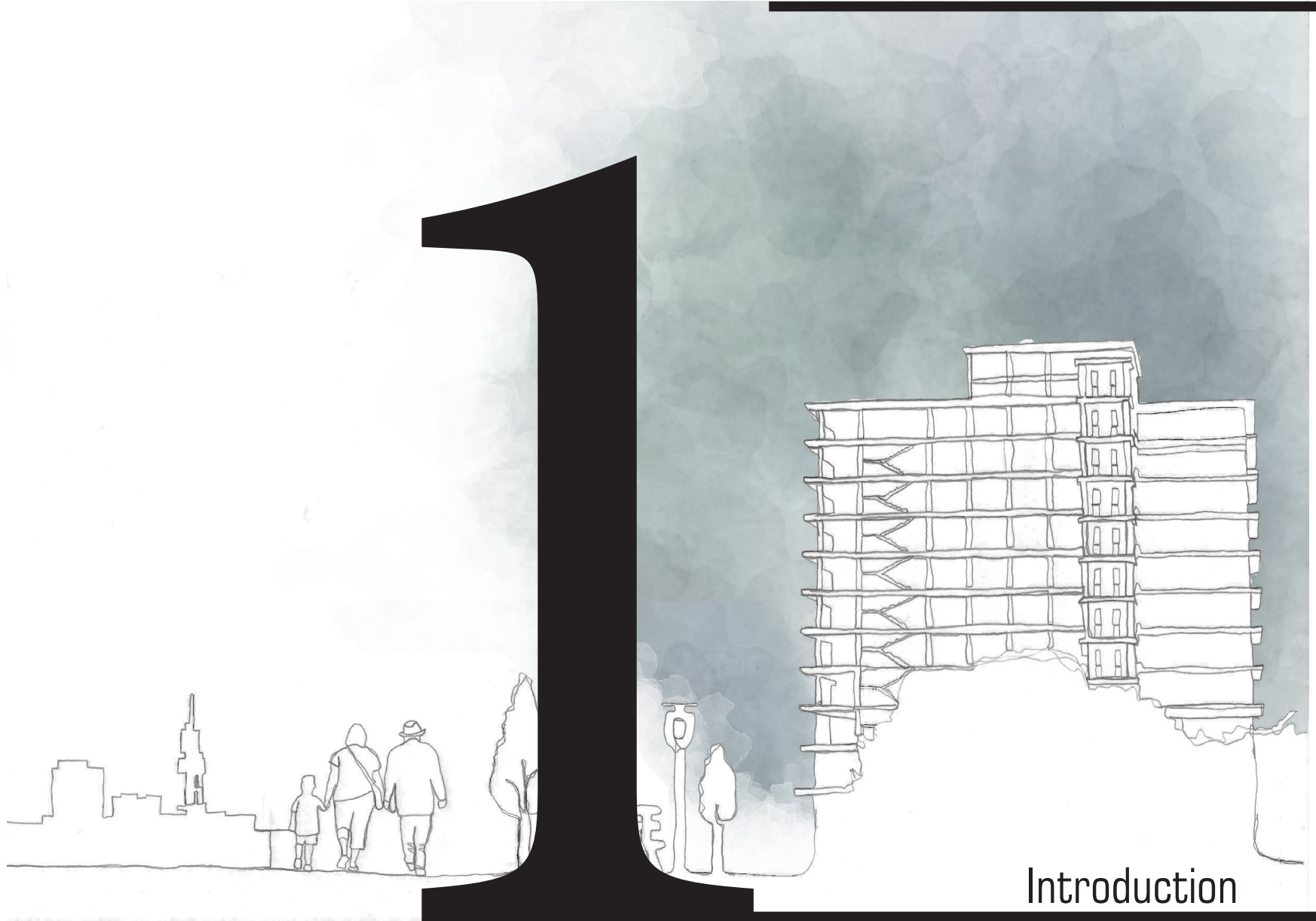
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# Introduction

## Social housing with interior public spaces

*“The pedestrian realm moves into the ... residential apartment complex. Atria, escalators, and corridors begin to articulate hierarchy in an exclusively pedestrian three-dimensional net form. These buildings possess the volume of neighbourhood; and what seems, on the outside, a coarsening of the city fabric becomes, inside, a lively and fine-grained intensification.”*

*NJ Habraken & J Teicher (1998:121)*

### 1.1 Introduction

The study will investigate the interior designer's role in creating affordable housing through the adaptive re-use of existing buildings in an attempt to resolve the social housing need. This topic was brought about by an interest in interior designers being under-represented in the development of social housing. Similarly, existing buildings, which would be ideal to house residential developments, are left empty in the densely populated Pretoria CBD. On a spatial level, the designer found the public spaces between the existing social housing units are under-developed, while research has proven public spaces to be a highly important element of low-cost housing (Aziz & Ahmad 2009:270).

The chapter will introduce the background to the study and the clarification of the real-world problem. The problem statement is then defined as a precursor for the research questions. The aims of the proposal are defined next, and related to the objectives and outcomes, followed by the

contribution of the study to the field and significance of the project. The research methods will be outlined and the delineation and limitations defined. An overview of the rest of the study will be given before the chapter is concluded.

### 1.2 Background

Nearly a fifth (18%) of households in Tshwane live in informal housing, roughly 164 000 households (Housing Development Agency 2013:16). Considering the average household size of 3,1 people per household, it amounts to just over half a million people living in informal housing in Tshwane alone (Census 2011:56).

Most of the social housing provided, is built on large stretches of greenfield sites as single unit houses on individual plots, with little to no consideration for public and shared spaces between the units. The inhabitants of these developments are faced with barriers such as spatial segregation, lack of infrastructure and long waiting periods preceding occupation.

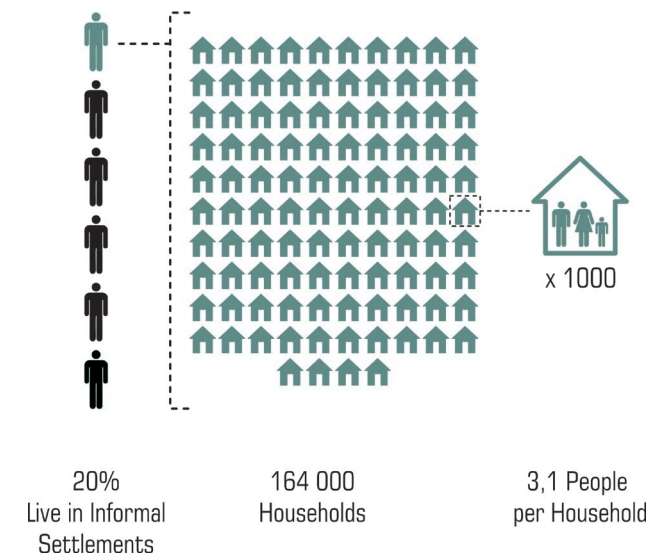


Figure 1 - Statistics of Informal Settlements (by Author, adapted from HDA 2013:16)



Figure 2 - Mapping of Social Housing Developments in 15 and 20 min driving radius

In stark contrast to the new developments built far from the country's urban centres (Figure 2), a variety of buildings in the city centre of Pretoria are empty and unused (Figure 3). These buildings are already well-established within reach of transportation, services, as well as employment infrastructure and various frameworks. The re-use of these buildings will cut down on initial construction costs and time, lower the cost of materials and allow users to make full use of the city's already established services, infrastructure, employment opportunities and support frameworks (Kincaid 2002:93-105).



Figure 3 - Mapping of abandoned buildings in Pretoria CBD (by Author)

## Social housing with interior public spaces

The housing developments implemented by government and other institutions do not take the future adaptation of the units by the users or the public spaces between the units into consideration. This leads to families occupying isolated units in environments that do not match their individual needs (Muthmabi 2014; Sebake 2015). This trend will be expanded on in case studies in Chapter 4.

### 1.3 Problem Statement

The problem is the constant introduction of medium and low density housing in areas removed from the city, requiring new infrastructure and often increased travel time to amenities and jobs, while there is an abundance of disused buildings in Pretoria CBD. After a preliminary overview of existing social housing developments, it appears that these developments often only supply the utmost minimum in communal, shared public space – limiting the social and spatial interaction of the community within the spaces (Sebake 2015, Muthambi 2014). In a study by Landman and Du Toit (2014), a conclusion was made (summarised graphically in Figure 4 and Figure 5), that public outdoor spaces are of importance to most inhabitants in medium income social housing, and especially so for female headed households with children (2014:33). An in-depth analysis of Sebake, and Landman and Du Toit's research will be elaborated on in Chapter 4 in the form of case studies.

The project will focus on Gap Housing subsidy recipients. "Gap Market" is a term used to describe the market above the income required to receive RDP housing (R 3 500), but below the margin to afford private housing (R 7 500), also

known as medium income. The project will seek to develop spaces where communities can prosper, and where the limited communal spaces in social housing can be used more effectively to create shared communal spaces. These spaces are not only important in their own right to improve the quality of the development, but also serve as an extension of the home space (Aziz & Ahmad 2009:278).

### 1.4 Research Question

How can a spatially integrated social housing typology for the medium income market be developed through the adaptive re-use of urban buildings, with a focus on the interior public spaces?

#### 1.4.1 Sub-Questions:

1. What opportunities exist in the adaptive re-use of a disused building in an urban context in terms of the creation a place-sensitive and integrated housing development?
2. How can interior design create shared public spaces that encourage community involvement and create a sense of place for all users within the housing development?
3. Can a new medium income social housing typology be developed to accommodate sustainable and resilient housing developments by focusing on high quality public spaces?

### 1.5 Aims

- Develop a new, contextually integrated social housing typology through the adaptive re-use of a disused building in an urban context.

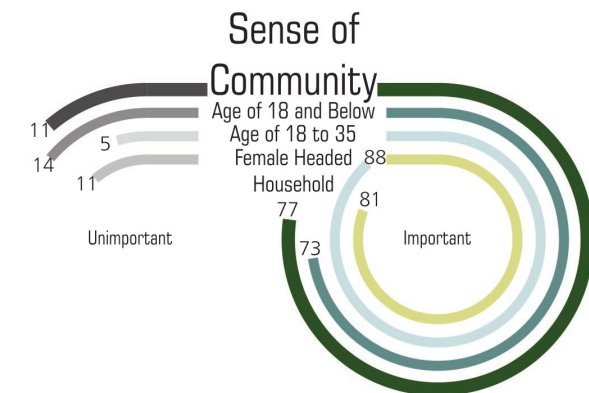


Figure 4 - Adapted from Landman & du Toit (2014:29-30)

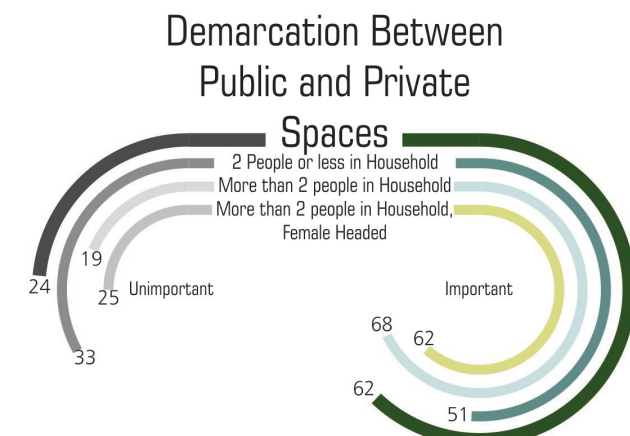


Figure 5 - Adapted from Landman & du Toit (2014:29-31)

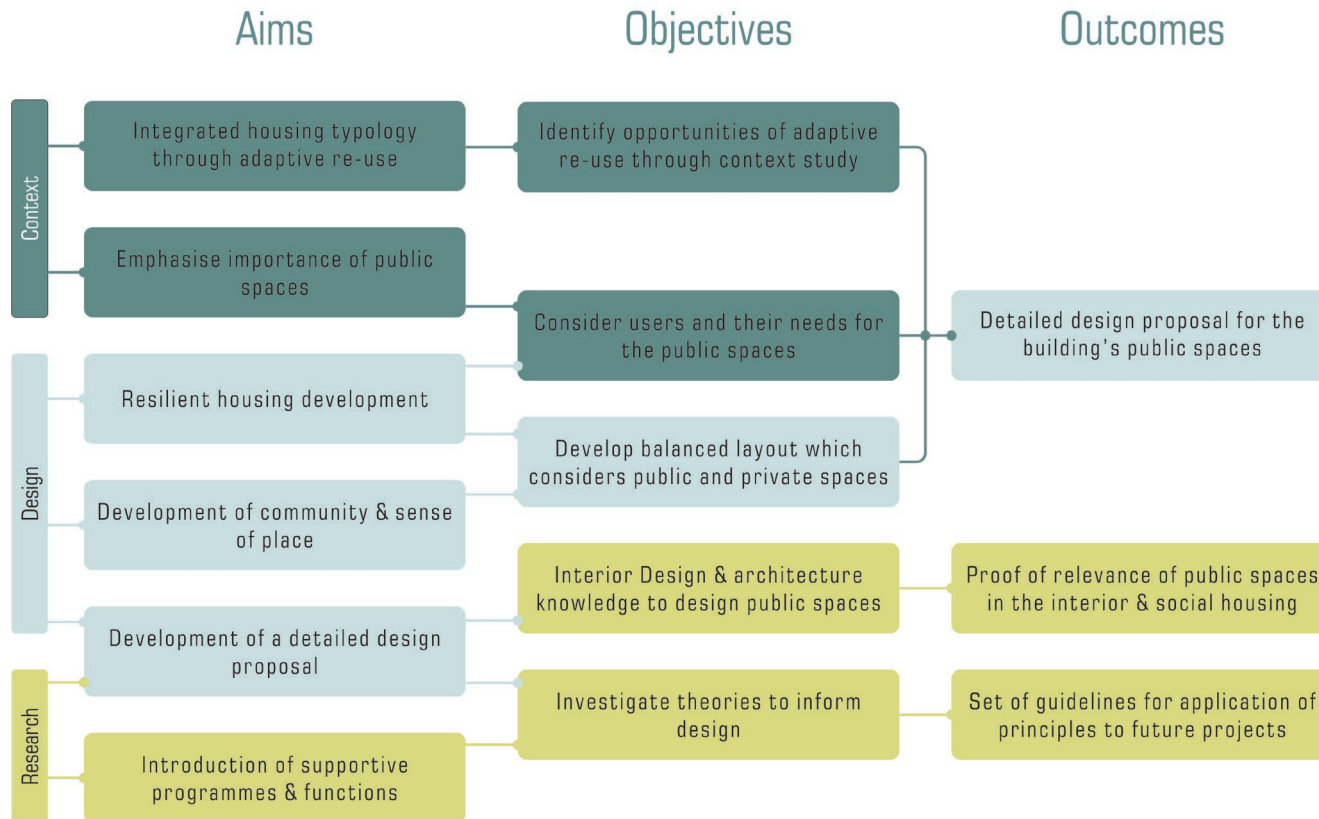


Figure 6 - Diagram indicating relation of aims, objectives and outcomes (by Author)

- Place the issues regarding shared and social spaces within a medium income environment at the forefront and emphasise the importance of public spaces.
- Create a resilient housing development which implements elements where appropriation is encouraged and can adapt to changing user needs, urban profiles and the growth of the community.
- Encourage the development of community and sense of place.
- Introduce supportive programmes, functions and activities where necessary.
- Develop an in depth design proposal for the public spaces.

## 1.6 Objectives

- Identify the opportunities within the adaptive re-use of a disused building in an urban context through a context study.
- Use interior design- and architecture-based knowledge to create shared public spaces that encourage community involvement and create a sense of place for all users in the development, through the design and development of considerate, inclusive public spaces.
- Develop a balanced layout which considers the spaces and services required for living units versus the development of the public spaces.
- The investigation of various theories to inform the design decisions, as well as confirming the relevance of interior design as applied to and focused on social housing and the public spaces within.

## Social housing with interior public spaces

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### 1.7 Outcomes

- A detailed design proposal for the building's public spaces.
- A set of guidelines, developed from the theory, to indicate future considerations and methods for applying the principles in future adaptive re-use projects.
- Proof of the relevance of public spaces in social housing developments.

### 1.8 Contribution

This project will contribute to the field of interior design through the thorough investigation of social housing from an adaptive re-use and interior design perspective. The definition of a term for these spaces, based on current knowledge, will broaden the existing field of knowledge.

### 1.9 Significance of Study

- The investigation of and focus on the design of public, shared spaces within a housing development
- The investigation of the viability of an adaptable housing development which provides for future changes in demographics and user needs
- The identification of elements to be provided in a permanent scenario versus elements more likely to require adaptability and appropriation
- The use of urban and public space theories in the development of community spaces

### 1.10 Research Method

The study will apply a mixed-method approach by using both qualitative and quantitative methodologies for various areas of the design and research process. A quantitative methodology will be used to gather and analyse survey data from existing research. A qualitative approach will be followed to identify and develop the architectural theories supporting the design, as well as in the design development and the technical resolution. The research process and the various methods used will be discussed below.

The methods aim to minimise the weaknesses of the various methods and put each to its best use with a combination of approaches. The different methods that will be used are case studies, logical argumentation, and simulation and representation research. The various elements and sections of the methods will be discussed individually; their relation is described in Figure 7.

The development of the theory for the project will use a logical argumentation approach, mainly focused on a literature review. This approach is generally used as a method of understanding some aspect of human interaction with the built environment (Groat & Wang 2002:304), in this case the use and relevance of shared public spaces. The aim of the method is to develop an argument with theoretical clarity and rhetorical power. The systematic analysis will be enhanced through a literature review and precedent studies. Logical argumentation is also a way to root the theory's claims to a larger transcendental realm (Groat & Wang 2002:304). In this



project, the focus will be on the development of sustainable housing and the encouragement of community involvement and the creation of a sense of place.

Logical argumentation can also lead to paradigmatic innovation, in this case the proposal of a new housing typology. This method provides a framework to which priori arguments (arguments that have no basis in current theory, revolutionary ideas, such as Venturi's Pillars of Architecture) can be linked. The arguments can be linked through the argumentation method, leading to a new normative stance (Groat & Wang 2002:309). The arguments identified will be used to create a well-substantiated argument and theoretical base.

The refinement of the design problem and the specific area of intervention (in the larger Interior Design discourse) will be determined by case- and precedent studies. This method

is often used to develop the theory in the design phase of a project by aiding in the definition of a hypothesis or the development of a blueprint for the study. The case study itself is an empirical enquiry that investigates a contemporary phenomenon within its real-life context (Groat & Wang 2002:346). It will focus on multiple cases. In this project case studies will be used to discuss and investigate the strengths and weaknesses of existing housing projects. Surveys done and data acquired by other researchers (Landman & Du Toit 2014, Sebake 2015) among residents in existing local housing examples will provide guidance on the requirements inhabitants have regarding public spaces.

Lastly, simulation and representative research will be used to develop the design solution itself, using the logical argumentation and case studies as basis.

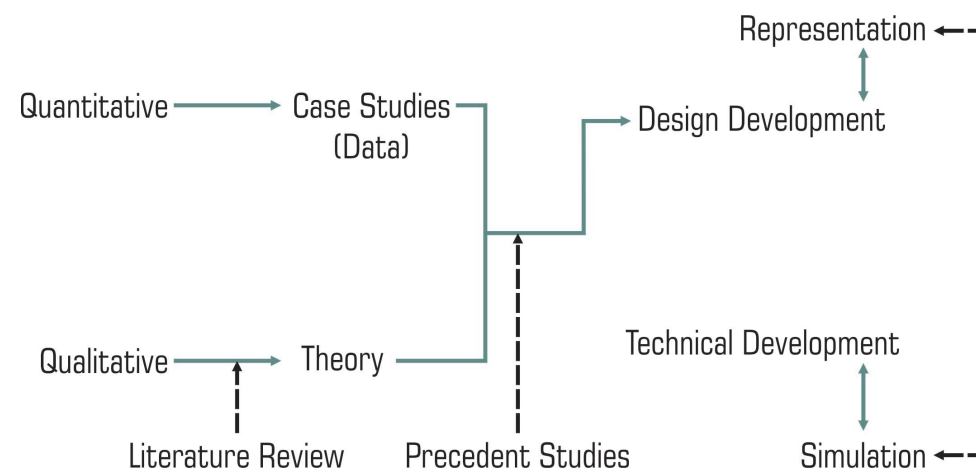


Figure 7 - Research process and approach (by Author)

## Social housing with interior public spaces

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Simulation is used to develop and test theory in the form of controlled replications of real-world contexts for the purposes of studying dynamic interactions within that setting (Groat & Wang 2002:278). This will be applied first via modeling the site and building in its current state within their physical context for a full analysis. The investigation of possible solutions will be investigated through representations of possible design solutions. The representations (fixed images/models that stand for the real object, drawings, visual investigations) could next be introduced into simulations in order to determine the success of the representational design proposals from an environmental and practical approach (Groat & Wang 2002:280). To ensure the proposals comply with South African building standards, these requirements will be adhered to in the representation phase and tested in the simulation phase. In order to test and iterate the design and technical proposal, an audit will be used to measure the efficacy of the proposed design solution.

In the development of the research used, logical argumentation is used to identify a series of arguments through literature reviews. The case studies will be used to refine the initial design proposal. The theories are applied through the simulation and representation research, which will develop the design resolution.

### 1.11 Delineation and Limitations

Thorough interviews with users in the medium income market will not be possible due to ethical constraints, though various published surveys and research will serve as substitutes.

Due to the time scale and nature of the project, it will be impossible for the design proposal to address all the issues of the proposed housing development. The proposal will focus on the public spaces between the units only, but will provide adequate space allocation and services for proposed units. The units will be considered as far as the infrastructure they require, the need for adaptability (the provision for a certain amount of permutations of different layouts) and the transitions required into the public spaces. They will not be considered up to a conceptual or detail design level.

Of the additional amenities provided within the building, spaces will be strategically selected for further development, and will be chosen to adhere to the aims of the proposal. They will be designed in full detail to achieve a fully resolved design. The remaining areas will be areas which can be developed in future studies, or by specialists.

The dissertation will include a context study, theoretical analysis, precedent and case studies, concept development, design development, development of a building brand and identity, and technical resolution, as well as the documentation of each segment. The context study will range from a macro (city-wide) to micro scale analysis of the building and its surroundings. The literature review will investigate a series of theories which will serve as base for the selection of precedents and the development of the concept and design. The technical resolution will identify a technical approach through which a select series of design details will be resolved.

### 1.12 Overview of Study

Chapter 2 will contain a contextual study to provide an insight into the existing conditions in and around the city. Chapter 3 will introduce the theoretical investigation and develop a base for the design intervention. Chapter 4 will analyse the research case studies and precedent studies to provide extra guidance on the design development. Chapter 5 will deal with the concept, design development, brand and identity, and technical development of the proposal and the study will be concluded in Chapter 6. Appendices will further elaborate on the theories consulted and access audits.

### 1.13 Conclusion

This project deals with the adaptive re-use of a building in the urban context of Pretoria in an effort to develop centrally-located, socially responsible medium income social housing. This is possible due to the abundance of abandoned buildings in the CBD in contrast to the social housing developed outside of the city. The focus on public spaces has been emphasised after a preliminary study of user requirements and preferences. The project will identify the opportunities of adaptive re-use for this application and in this context, investigate the viability of public spaces to encourage community attachment and create a sense of place, and develop a new typology for medium income social housing.

The aim is to focus on the interior designer's involvement in social housing. The importance of social spaces in the building is emphasised and investigated. The methods for the design development will have both qualitative and quantitative

elements in order to achieve a balanced approach to the research for the project.

A comprehensive and detailed design resolution of the whole building is not the purpose of this study. This project will focus on the public spaces in between the living units and provide detailed designs for these areas. The living units will be considered only as far as workable options for rental and the reticulation of services to the units.

This concludes Chapter 1, outlining the study. Chapter 2 investigates the context of the study, both physical and regulatory, as well as the building itself. Chapter 3 outlines the theoretical approach to the project, with Chapter 4 investigating various precedent and case studies. Chapter 5 introduces the design and technical development of the project. The study will be concluded in Chapter 6 by discussing the contributions of the study to the field of interior design and recommendations made for future studies.

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## Social housing with interior public spaces

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