IDENTITY AND ARCHITECTURE: THE IMPACT OF URBAN INTENSIFICATION
A Research Project submitted in partial fulfilment of the requirements for the degree of Master of Architecture Professional
Unitec Institute of Technology, 2012

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ABSTRACT

This project investigates the impact urban intensification in Auckland suburbs has on the social aspects of identity (the individual and the community). The scheme, a medium or higher density infill housing development for a non-profit housing association, is proposed on an undeveloped site in Auckland.

The project tests the principles of increasing densities to satisfy both the sustainability objectives of current planning policies and the social and spatial needs of residents. It also studies ways of using vacant sites that have not been previously developed for urban use. These sites are left undeveloped because they have been deemed too difficult for the standard low-density suburban housing model that has always been preferred in Auckland. Factors such as slope, aspect, access and drainage are the main reasons for these sites being left unoccupied.

Policies to intensify Auckland continue to dominate strategic planning therefore; these undeveloped sites become significant and attract attention because of their ability to increase the density of an area without interfering with the current living conditions of built suburbia. Where they occur within walking distance of a town centre and good public transport nodes a design-led approach to suitability for housing use provides the basis for this study.
ACKNOWLEDGEMENTS

I would like to thank the tutors and lecturers at Unitec for their encouragement and support over the last five years. Special thanks to my supervisors David Turner and John Hewitt for their guidance throughout the year.

I would like to thank my family and friends who have supported my studies, and my fellow students for their never ending critique and for creating an enjoyable environment in which to learn.

Lastly, I would like to thank my mother for her continual encouragement, guidance and understanding. Without your support this thesis would not be possible.
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1.0 INTRODUCTION

1.1 PROJECT OUTLINE

In Auckland, during the 1980’s, the on-going population growth together with the recession (due to the International Share Market Crash), saw the beginnings of a change in the urban form of Auckland. Intensification of areas such as Remuera, Mission Bay and St Heliers was achieved through infill housing. The majority, made up of units and flats, created a density of 19 people per hectare. Although this intensified the city, issues such as house type, identity, privacy and the neighbourhood character arose. This infill housing of the past has degraded parts of Auckland’s urban environment, and has created a negative perception to this type of intensive living, together with unsustainable communities. The idea of living in higher density infill developments in New Zealand is therefore dismissed, as it is perceived that the quality of living and the independence people are used to, on a standard quarter of an acre section, is sacrificed.

However, the Auckland Regional Affordable Housing Strategy released in 2003 and The Auckland Plan 2011 both indicate a need for housing intensification in the suburbs of Auckland. Population growth is an important factor in the need for higher densities. Auckland’s built form needs to grow faster and denser to meet the demand, “The RGS (Regional Growth Strategy) is intended to enable a population of 1.9 million to be accommodated in the Auckland Region by 2030. This is a population increase of nearly 900,000. To achieve this about 70% of new households would have to be
accommodated within intensified areas (town centres, corridors and some limited infill).” A solution needs to be offered where the required density levels are met and the social needs of residents are addressed. Therefore, for this project, infill is regarded as appropriate for a small percentage of this anticipated growth.

The Auckland Plan 2011 also aims to increase the sense of community that residents of Auckland feel in their local community, with a targeted increase from a recorded 61% in 2010, to 75% by 2040. This poses the challenge of addressing the social aspects of living at higher densities, while also tackling the new intensification requirements.

This project investigates the impact urban intensification in Auckland suburbs has on the social aspects of identity, both individual identity and community identity. The scheme, a medium density infill housing development for a non-profit housing association, is proposed on an undeveloped site in Auckland.

The project tests the principle of increasing densities to satisfy the sustainability objectives of current planning policies and the social needs of residents, and studying ways of using unused sites, which are undeveloped because they have been deemed too difficult for the standard low-density suburban model.

1.2 RESEARCH QUESTION

Taking into consideration the social aspects of living at higher densities, how can affordable medium density infill housing be designed on unused and difficult land in Auckland’s suburbs?

1.3 AIMS AND OBJECTIVES

The intention of this project is to develop an alternative model for medium density infill housing in Auckland suburbia, taking into consideration the social needs of the residents as a community and as individuals, providing a practical solution that can be adapted to different situations throughout Auckland.

Key objectives:
- Define the impact urban intensification and higher density has on social aspects of living and addressing the issues through design.
- Test the principle of increased densities to satisfy sustainability objectives.
- Test the principle of increased densities to satisfy the social needs of residents.
- Study ways of using difficult land for infill housing to intensify Auckland suburbs.

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1.4 KEYWORDS AND DEFINITIONS

Urban Intensification

Urban intensification is a response to the pressures of urban growth placed on cities, and an effective alternative urban sprawl. Intensification has been proposed under the Auckland Regional Council Strategy 1999 as, “an increase in density (of dwellings, population, employment, etc) over the current density of a given area.” At higher densities it proposes development of built form at a compact level.

Infill Housing

Infill can be described as a general intensification of building in unoccupied space in an already existing built area. Suburban infill describes the insertion of building on land unused or underdeveloped in an existing suburb.

Density

Density refers to the number of units, either people of dwellings, in a given area. AMCORD (Australian Model Code for Residential Development) defines density as, “A measure of population or the number of dwellings per unit of area; a measure of the form of the built environment; and a measure of development potential.”

Medium Density

In New Zealand medium density is defined as, “Housing at densities of more than 150m²/unit and less than 350m²/unit, or 30-66 dwellings per hectare (dph).” It is characterised by ground level entry, the inclusion of a private external space and a defined territorial boundary. Throughout this thesis medium density refers to the amount of dwellings per hectare.

Identity

Identity can be defined as self-expression, uniqueness, or a definable individual entity. However, the argument over how identity is formed has created two contrasting opinions of what constitutes as identity: personal identity and social identity. Personal identity is an individual’s uniqueness formed separate from any influence, while the social identity of an individual is formed through identifications with significant others. Sociologists believe it is the collection of group members and environment that define the individual. Housing influences identity through the way architecture facilitates different types of

4 Australia Department of Health, Housing and Community Services, AMCORD URBAN (Canberra: The Department of Health, Housing and Community Services, 1992), Part 1: Planning and Implementation Approach.
5 Turner, Best Practice in Medium Density Housing, 22.
behaviour, daily functioning and social interaction, “We not only read information about others through their dwelling, but also about ourselves. Our own dwellings and neighbourhoods create self-concepts about who we are, where and how we live therefore affects how we see ourselves.”

Identity, throughout this thesis is therefore separated into two categories: individual identity and community identity.

Individual
Defined as separateness, independence, divisible and a distinction from others, "Every man in his physical nature is one individual single agent." The term was originally introduced with a negative connotation in the 1830’s. Individualists were seen as entering into society to further their own interests without any thought towards the interests of society as a whole. At the time it stressed one man’s “personal existence over and above his place of function in society.” Through the development of scientific, political and economic thought, this understanding contradicts the use of the term presently. Individual, as it is used presently, stresses a distinction from others, and is perceived as a positive concept.

Community
Community is defined by Robert Nisbet as, “All forms of human relationships which are characterised by a high degree of intimacy, emotional depth, moral commitment, social cohesion and continuity in time.” It refers to connections, relationships, associations, interactions and of belonging to a greater whole. It is described successfully by the African Proverb ‘I am because we are.’ This concept, called Ubuntu, focuses on the relationships between members of a group (tribe), with a belief one individual cannot exist in isolation.

Privacy
Privacy is a state in which one is not disturbed or observed by others. It is the level of ability of an individual or group to seclude themselves, therefore being able to reveal themselves selectively, and the right to withhold certain parts of life from the wider society. The boundaries of privacy differ among cultures and individuals, and in some cultures the concept is a modern one.

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8 Raymond Williams, Keywords: A Vocabulary of Culture and Society (USA: Oxford University Press, 1985), 163.
2.0 METHODOLOGY

Research has been undertaken using three different research methods to gain a thorough and diverse understanding of all the information involved. Then research through design is undertaken. The chosen methods include quantitative, qualitative and a precedent survey.

Quantitative research, in the form of a selective literature survey, includes information published worldwide (not restricted to New Zealand publications). Mediums such as books, journal articles, media reports and published government documents have been investigated, and initially selected through the use of key words and phrases. This survey also covers related data collection, such as demographics and social profiles. Qualitative research will follow, based on existing opinions and conclusions on related topics. This type of research provides an abstract view on issues involved.

A selection of precedents has been chosen that show a correlation between the main issues arising through research by design, and existing built solutions. These precedents give an indication of how solutions to relative issues can be practically applied. Precedents include those of an architectural nature, as well as urban spaces and landscaping projects.

These methods of research result in a wide collation of resources that help address the architectural research question posed. As architectural and social problems are addressed, a range of different forms of information will help to produce a well-rounded solution.
3.0 DEFINING THE PROJECT

3.1 LITERATURE SURVEY

This selective literature survey covers three main categories. While the bulk of literature investigated concerns social ideas of identity (community and the individual), and intensification and density housing; literature concerning the history and future of Auckland growth has also been investigated to build a solid base of information.

3.1.1 Literature concerning the Urban History of Auckland Housing and Future Growth

A Brief History of Auckland’s Urban Form, published in 2010 by the Auckland Regional Council, provides a thorough view of Auckland and how its urban form has evolved since its founding in 1840. The report investigates the main factors behind growth in Auckland suburbs, describing the cities growth in terms of density, land area and built form, and briefly discussing Auckland’s predicted future. The report investigates suburbanisation and urban sprawl through from the 1930’s to more recent strategic attempts to condense the city, including infill attempts in the 1980’s.

Medium Density Housing Out West, an article written in 1999, discusses the history of West Auckland and its future in regards to the Regional Growth Strategy. It provides a concise statistical view of growth over the last one hundred or so years in this area of Auckland.

The Auckland Plan 2011 discusses the strategies and goals for the future intensification of Auckland. The plan provides the most concise idea of the problems facing Auckland over the next thirty years, and provides practical, if vague, solutions. The plan discusses demographic change and population growth, social inequalities, the environment, and infrastructure planning and provision. The chapters Urban Auckland and Auckland’s Housing introduce principle solutions for the accommodation of growth through intensive housing, and the demand for good design that provides a high standard of quality of life.

The Regional Growth Strategy: 2050 helps give an indication of the level of future growth needed in Auckland to meet demands. Much like the targets outlined in the Auckland Plan, the strategies main aim is to, “ensure growth is accommodated in a way that meets the best interests of the inhabitants of the Auckland Region... The vision is to sustain strong supportive communities, a high-quality living environment...”10 Discussions concerning transport, desirable communities, and housing choice and affordability indicate possible architectural and social outcomes available for the city, if intensification is undertaken at a high standard. Both the Auckland Regional Open Space Strategy and the Auckland Regional Affordable Housing Strategy also tackle two main areas of concern: the availability of open communal space in Auckland versus housing intensification, and the affordability of the housing provided.

The results of growth in Auckland over the period from

2001 to 2006 are covered in the report *A Living Strategy: Monitoring Regional Growth*. This conclusion of growth over a five year period provides a strong idea of where the city is heading, and outlines the effect this growth has had on intensive living (affordability and a rise of choice in dwelling type). *Intensification within the MUL: Residential and Commercial Impacts and Regional Intensification: Intensive Housing Demand and Supply Issues* provide statistical views on the intensive living issues that Auckland faces.

The *Residential Design Guide for Developments in Residential Zones in Strategic Growth Management Areas* outlines the areas in which communities expressed concerns over future growth, and categorises the areas in which most focus should be directed when building at a higher intensity to ensure the highest level of success. The guide covers eleven areas of concern including neighbourhood character, site layout, density, visual privacy, landscaping, and private open space, with the principle aims to combine successful suburban living with intensive living, “To provide an urban structure of walkable neighbourhoods clustering around centres of compatible mixed uses in order to reduce vehicle dependence; to foster a sense of community and strong local identity in neighbourhoods; to provide a variety of housing types to cater for the diverse housing needs of the community at a density that can ultimately support provision of local services; and to ensure cost-effective and resource-effective development to promote affordable housing.”

3.1.2 Literature concerning the Social Ideas of Identity, Community and Individual

*New Keywords: A Vocabulary of Culture and Society* by Raymond Williams, and *New Keywords: A Revised Vocabulary of Culture and Society* discuss vocabulary important to society and culture, and analyse their definitions drawing from two areas: art and society. These books provide a base to form definitions for terms such as identity, community, individual, privacy, collective, private, public, and behaviour, in their specialised contexts. Each word is discussed in regards to its history, cultural history, historical semantics, history of ideas and sociology. Reference books such as the Oxford English Dictionary also help to define the definitions that form the basis of this thesis.

The dissertation *Housing and Identity* provides a concise summary of identity and self-perception in terms of communication through housing. Theories such as Despres’ *Meaning of Home* and the identity aspect of home help to inform on a basic level, levels of social interaction. This document forms a basis for the investigation into identity and its importance in architectural design.

The relationships between the individual and their environment are addressed in *Environmental Psychology: Principles and...*
Practices. Most important is the discussion involving the conceptions born from an architectural environment, and its practical design application. Levels of private and public identity are defined in *Institution and Home: Architecture as Cultural Medium*. From intimate to urban-public a territorial gradient is developed in an urban setting. This text also explores the effects cultural change has on the ideas of private and public, and how design through architecture can enforce cultural messages.

Perhaps one of the most informative resources in regards to the importance of social ideas in urban living *Urban Social Theory - Self, City and Society* provides a thorough insight into the history of social thought. The book discusses the concepts of community: introducing Tonnies theory of Gemeinschaft and Gesellschaft, and important arguments from Robert Nisbet and Emile Durkheim. Topics covered include community and suburbia, mass housing, rationalism versus community, exclusion and inclusion, and housing, self and society. These topics outline the social implications of urban development.

Urban behaviour is discussed in the Department of Building and Housing’s *Sustainable Urban Behaviour*. This text helps with understanding human behaviour and expectations regarding housing, and discusses the existing suburban housing in relation to these expectations. The perception that low-density housing offers the best social environment needs to be overcome, with successful social and physical aspects being combined.

In *Architecture and Identity* it is argued that "the idea of 'architecture as identity' rivals 'architecture as space' and 'architecture as language' - principal metaphors and themes in architectural discourse." This is backed up with arguments from a variety of sources including David Appleyard’s theories of personal identity formation and Karl Jung’s concepts of collective unconscious. This summary of theories, as well as the collection formed in *Phenomenological Conceptions of the “Self” and the Ontology of Architecture* provides an understanding of all arguments involved with identity and architecture.

### 3.1.3 Literature concerning Intensification and Housing

*Best Practice in Medium Density Housing Design* is one of the few texts that considers medium density housing in the context of New Zealand. It investigates a suitable housing typology for affordable urban New Zealand, identifying with the need for housing, in New Zealand in general, to consider the local traditions of domestic design, but avoid compact suburbia. The text discusses the importance of human expectation, and what the residents of these higher density housing developments expect in regards to social integration. ‘Defensible space’ is referred to as the relationship created between the private and the public, “The most successful developments take detailed account of all design issues, including the intended resident mix, neighbourhood character, interface with the public domain, site specifics (e.g. topography), car

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parking, appearance (style), privacy, security, landscaping.13 Numerous case studies of medium density housing developments are included; however, there are a limited number of schemes in New Zealand that successfully integrate the idea of community and individual into the overall design. This lack of diversity in housing schemes is developing a monocultural society.

The Good Solutions Guide for Medium Density Housing also discusses the need for intensification of forms in the housing of Auckland. The guide includes the different elements to consider when designing medium density housing. This includes site design, house types, public and private spaces, accessibility, building form and mass, street frontages, fencing and walls, visual character, repetition and diversity, and materials. Combining private and quality public environments is a key factor in the discussion, with the guide stating a balance is needed to create sustainable communities. Growth Misconduct? is another resource that investigates the sprawl of New Zealand cities and the improvement that is needed when it comes to urban intensification. It outlines the limitations of some solutions, and encourages in-depth thinking into the problems surrounding the creation of liveable, sustainable and prosperous cities.

Social Implications of Housing Intensification in the Auckland Region is an analysis and review of material collated from numerous sources and combined to explain the affects higher density is having on the social aspects of housing in Auckland. It helps to indicate the existing relationship between community and intensification. Community cohesion and identity are used to question different urban forms and the relationship between the architecture and the community. The observation that residents of Auckland do not feel a sense of community within their intensified area is discussed; as well as the level of involvement different people want to have within a community and whether it is important to them. When referring to social interaction the study concludes that the research, which includes literature, media reports and surveys, is inconclusive.

Infill: New Houses for Urban Sites discusses the need to optimise infill sites, but also design to suit the numerous different needs of the occupants, while the Housing Design Handbook asks what new buildings can offer to the existing. Housing as if People Mattered is much the same, and offers site design guidelines for medium density family housing. It provides a step by step guide for planning, including important sections covering density and form, community identity, personalisation, private open space, public open space, and landscaping.

One of the most important resources found related to the issues of infill and social effects is the literature review Urban Development Strategy Working Paper 6: The Social and Environmental Effects of Residential Infill Development in New Zealand, written in 2006. This review provides a description of infill and its context in New Zealand, and then discusses the key benefits of intensification of this method. It also discusses the negative impact infill has had so far on the community. This review mainly discusses the mistakes of the past and gives a good indication of what should be avoided in the future.

13 Turner, Best Practice in Medium Density Housing, 2.
Other books such as *Housing, Community and Conflict: Understanding Resident Involvement*, and *Urban Social Theory: City, Self and Society*, discuss the relationships between social aspects and urban living. *A Changing Streetscape and Residents' Responses: Infill Housing in Christchurch* discusses the sense of place in relation to infill housing. The diversity of occupants and their reaction to infill existing in Christchurch is a main issue targeted.

Few resources talk about recent successful infill housing designs and principles in Auckland. A lot of the literature offered is not within the context of New Zealand, but can be used and modified for the Auckland urban environment.
3.2 PRECEDENT SURVEY

The range of precedents, built over a significant span of time, help to show the development and growth of urban housing over the last sixty years, and they give an idea of where intensive housing of this type is heading in the future.

The chosen precedents display a range of urban housing development types, and they have been chosen because of their correlations to issues arising through research by design. They give an indication of how issues such as site, volume, light, access (pedestrian and vehicle), privacy, community and individualism, all of which are important issues that must be resolved in my project, can be addressed in practical application.
3.2.1 Siedlung Halen Housing Estate

**Architect:** Atelier 5  
**Location:** Bern, Switzerland  
**Date of Completion:** 1961  
**Density:** 81 dwellings at 110dph

The Siedlung Halen Housing Estate, located 5km outside of Bern in Switzerland, is a community of eighty-one low-rise high-density terraced houses. The development, which was initially conceived in 1955 and completed in 1961, was built to explore a solution to the post-war ‘housing problem’ in Europe. The main aim was to combine advantages found in both suburban and urban housing.

Designed by Atelier 5, who were influenced significantly by Le Corbusier works, including elements from Cite permanente of Sainte-Baume (1948) and Unite D’habitation (1952), the development is described as a, “horizontal resection of Unite several slices of which have been laid out on the terraced site.”14 The design also incorporates, “modernist program of the 1920’s about community and privacy, garden city notions of a healthily life-style in a suburban setting and attitudes about material and standardisation,”15 and draws inspiration for its narrow courtyard houses from medieval Bern.

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This precedent is influential due to its approach to community. One of the architect's main goals was to introduce the suburban idea of community into a higher density, while protecting the privacy of individuals and both the indoor and outdoor private spaces, and acoustically isolating each unit while promoting social ties in the common habitat. This concept is based on utopian socialist ideas. There are designed communal and private areas throughout the site to enforce these ideals, such as communal playgrounds and private walled gardens. The development is a success in this respect, not sacrificing community for individual privacy and vice versa; however, it has been criticised for appearing artificial in its quest for an achievable medium between the two. It appears to work as a community in theory, but there is doubt that it is a practical success.

The development is comprised of five blocks of housing modulated as a horizontally extended city. There are only three types of units, with only minor variations in plan. These are intermingled with each other rather arbitrarily to give some illusion of diversity. The only deviation from the standard is an additional block lined with five differently planned dwellings. The width of each dwelling is four or five metres and this narrowness limits any design freedom in plan. This follows the idea of standardisation that is sought, but is in contrast with one of the driving concepts of community - that with the idea of community comes diversity - and standard plans do not offer a wide range of opportunities.
Siedlung Halen also provides an idea of the possibilities of building on a slope. Located on the north bank of the Aare River, the development sits on the sloping folds of the Jura Mountains and Bernese Alps. The two parallel rows of housing step down the site, and are shifted slightly to create a large central piazza from which steps connect to an upper terrace and lower pedestrian path. The sections of each individual dwelling follow the natural slope of the site, stepping down using balconies, trellises and small gardens to break up the form. The slope of the site is considerable, but is used successfully in section to articulate interior space and external form.
3.2.2 Kingo Housing

*Architect:* Jorn Utzon  
*Location:* Helsingor, Denmark  
*Date:* 1956 - 1960  
*Density:* 63 dwellings at 20dph

Located in Elsinoer (Helsingor), 45km north of Copenhagen, the Kingo Housing Development consists of sixty-three individual dwellings inspired by the traditional Danish farmhouse. Completed in 1960, the idea was initially drafted by Jorn Utzon for a competition project in Sweden during 1953.

The development’s design originates from Utzon’s additive approach, in which designing and building starts with one individual unit and proceeds from there, each unit being designed separately and taking into account the individual dwelling typography and context. The rows of dwellings on the site undulate, following the contours and providing each dwelling with the optimum conditions in regards to privacy, sunlight, shelter and view. Utzon describes the layout as, “flowers on the branch of a cherry tree, each turning towards the sun.”\(^{16}\) On a sloping site this approach may help improve the detailing of the master planning, as it provides each dwelling with the opportunity for maximum advantage.

Although the dwellings on this site follow the contours in regards to placement, the contours are not taken into consideration when designing the individual dwellings in plan and section. The L-shaped homes with central courtyards are square in shape (15m x 15m) and sit flat on the top of the contour. They do not integrate themselves into the site, which is important when working with a sloping site and wanting to maximise use of space.

This development approaches privacy by enclosing two sides of each house by walls of varying heights, while the other sides are enclosed by neighbouring dwellings. This limits the amount of private space, but this is excused by the architect with the provision of large landscaped communal spaces.
3.2.3 Rokko Housing Complex I

Architect: Tadao Ando  
Location: Kobe, Japan  
Date: 1983  
Density: 20 dwellings at around 150dph

The Rokko Housing Complex I is located on the south slope of Rokko Mountain, and is influential through its success in privacy at higher density, encouraging community, and designing on a sloped site.

The main aim behind the design was to use the slope, a sixty-degree angle, to integrate the architecture with the natural landscape. The units are arranged in an organised grid system stepping down the slope; however, the dwellings sit at different levels, with different views towards the ocean. This provides some form of privacy, as each of the private external terraces are set at different levels.

The design includes a public central plaza and public terraces and alleyways, included to try to encourage some form of interaction between the residents. Ando claims including public spaces encourages a stronger sense of community, and that there is a strong relationship between public and private spaces that is created through the concept of public traffic on terraces. It is unclear if this approach works in this instance, but could be successful in a large housing development because it is almost impossible to provide public spaces and predict how and if people will use them. Therefore, introducing some form of interaction between the two spaces, private and public, may encourage community on a large scale.
3.2.4 Beaumont Quarter, Stage 2 - Cliffhanger and Leapfrog House Types

Architects: S333 Architecture and Urbanism and Studio of Pacific Architecture

Location: Auckland, New Zealand

Date of Completion: 2005

Beaumont Quarter is a development in central Auckland, New Zealand developed in stages by domestic and international architectural firms. The development includes around 250 houses and apartments of various types, with the Leapfrog and Cliffhanger house types the focus of this study.

The Cliffhanger and Leapfrog houses are built into the steep side of a cliff on the eastern edge of the site, with one house supporting the other. The Cliffhanger house makes use of the unusual typography, clinging to the cliff and stepping down following the typography, and is connected to the Leapfrog house below by an elevated timber boardwalk.

The roofs of the Leapfrog houses provide a large amount of external public space for both of the dwelling types, while the design of each individual dwelling includes an internal private courtyard.
3.2.5 Vauban

**Architect:** Forum Vauban  
**Location:** Freiburg, Germany  
**Date:** Mid 1990’s

Vauban is a planned neighbourhood in Germany that houses around 5,000 inhabitants and was built as a ‘sustainable model district.’ The handling of transportation throughout the site was helpful and influential.

Within the neighbourhood there is a focus and encouragement on foot and bicycle traffic, while the development is also connected to the city by tram. The layout of the development lends itself to the linearity of the tram tracks, ensuring that all dwellings are within a reasonable walking distance to the nearby tram station. Car ownership and use is still facilitated, but not to the degree that is usual. A 2009 survey of the residents showed, “70% of the households had chosen to live without a private car,”¹⁷ which is an increase from the original statistic of around 19%, with 81% originally owning or using a vehicle.

The layout of the area encourages the disuse of vehicles. The site has a road hierarchical structure (main roads, local streets, pedestrian bicycle paths) that incorporates the principle of filtered permeability. Permeability is the extent to which urban form allows movement. In this case the geometry of the road layout slowly filters out the car. The number of roads that permeate the development is reduced, and most that do are crescents and cul-de-sacs. This results in a discontinuation of vehicles where they connect to a network of pedestrian and bicycle paths that run throughout the entire development. This type of filtering layout is known as a fused grid.
3.2.6 Limos Nijmegen

*Landscape Architect:* OKRA  
*Location:* Nijmegen, Netherlands  
*Date:* 2007

The land (3.6 hectares) is located between the edge of the city and extensive woodlands to the south, with the Limos former army barracks also located on the site. The redevelopment of the site is based around the surrounding landscape, with the new buildings sited in the middle of the landscape. “The landscape will continue among the buildings, and the woods fan out towards the city. This continuous landscape, the banks and ridges in the land and the alignments already present have formed the guiding principles for the siting of the new buildings, with the informal open structure which opens itself up to the landscape.” The exclusion of vehicular access, in this case, allows for an uninterrupted landscape that the occupants can use for any purpose. The redevelopment provides underground car parks, but “the road providing access to the covered car parks is slightly submerged and set into the landscape. The network of slow traffic routes connects up with existing routes. Underground car parks are incorporated into the urban estate by designing them as underground spaces, through which the landscape continues.” The use of the typography successfully segregates the vehicle from day to day living.

19 Ibid., 33.
3.2.7 Conclusion

These examples of housing developments at medium and higher densities provide an idea of how architectural expression is affected when high or low priority is placed on the social aspects of design. Creating public open spaces and allowing for high levels of community affects site and spatial arrangement, while on the other hand designing at a density that allows an acceptable and sustainable level of privacy between dwellings affects density levels. In some cases architecture takes precedence over density and vice a versa, while other developments try to create a balance between the two (Siedlung Halen). The ideas of social cohesion and privacy have been addressed in numerous higher density developments, but need to be further explored in the future if density levels are to rise to meet the expected increase in population and if these higher densities are to be accepted by the public.

Using a site to drive an architectural idea is the basis for this thesis. The integration shown between the dwellings in these developments and the site provides an idea of how involved architecture can become with its typography. Jorn Utzon’s additive approach is also influential in that it takes the approach to context to the next level, and designs each dwelling separately in detail, and therefore every dwelling responds to its immediate context.

Also introducing a hierarchy of circulation and access slowly segregates vehicular use from day to day life. This introduces sustainability goals for the future, and allows a higher level of freedom in architectural design.
4.0 PROJECT DEVELOPMENT

4.1 SOCIAL THEORIES

The question of identity, both individual and collective, and how it is addressed in architecture, particularly in housing intensification forms the directive for design by research, which explores existing ways of approaching and treating the social issues of identity. The summary of research conducted includes definitions and social theories, and their importance to architecture. Theories explored include those devised by Tonnies, Durkheim, Robert Gifford and Amos Rapoport. For an in-depth analysis of these theories see the Appendix I – Social Theory Analysis.

4.2 THE DESIGN BRIEF

To provide a housing association with an infill housing development in an Auckland suburb (Glen Eden), with a projected density of between 30 and 60dph (dwellings per hectare). This will provide around 40 to 70 housing units.

The surrounding community of Glen Eden will be incorporated into the design of the master plan and vice versa. Creating connections through the site to local public spaces and retail and transport nodes is important; as well as creating public open spaces within the chosen site area for the use of both the development’s residents and residents of the local Glen Eden area. These open spaces should cater to a range of users and include courtyard and eating spaces, open grassed areas and public walkways. These spaces should connect the various areas of the site to each other and also to the site’s residential context.

Multiple vehicular and pedestrian access points to the site will also be developed, and access to the individual dwellings will be investigated. Vehicle use on the site will be discouraged, with a filtered level of access across the site. A small amount of visitor parking, or a space for this purpose should be provided.

The development should provide various house types to fit the current and expected demographics of the Glen Eden area. This mainly includes young couples, families, single parent families and the elderly (65 and over). These individual dwellings should also provide the residents with a number of private spaces to provide a level of individual identity within the development. A balance needs to be achieved between dwelling privacy and the community, while still retaining a relationship between the communal spaces and the private dwellings.

The solution should be able to be generalised and reproduced on various sites throughout Auckland, to provide a solution for difficult unoccupied sites.

4.3 DEFINITION OF CLIENT

The Auckland Regional Affordable Housing Strategy indicates a strong need for affordable housing in Auckland. Housing is defined as affordable if, “households can access suitable and adequate housing by spending a
maximum of 30% of their gross income.”20 This need for housing that is affordable, while also accommodating the needs of a diversity of residents and the needs of the community, leads to the implementation of a housing association as the client.

A housing association is a community based non-profit organisation that provides low-cost affordable housing. Initially the housing association borrows money to develop a scheme, and then sells to the residents at cost. A proportion of houses built are usually retained by the housing association for members of the housing association to occupy as tenants.

They provide houses for sale or shared ownership schemes to help those who cannot afford to buy outright. A shared ownership scheme involves partially buying and partially renting, that allows residents to buy a home over a period of time. Usually households “buy between 50% and 75% share of a property, paying a subsidised rent on the remaining share,” 21 but with the rights and responsibilities of full ownership. This scheme is aimed towards first time buyers and those who cannot afford to buy in the current Auckland housing market.

Housing associations gain members through a period of tenancy to prove reliability. This form of tenancy can also be combined with the rent-to-buy form of tenure. Through ownership by the association the capital value and the equity accrues to the membership, and the houses retained serve as an asset base for any future borrowing by the Housing Association to enable funding for other projects. Any trading surplus is used to maintain completed schemes and to help finance new developments.

An investigation into the current average income of residents living the Glen Eden east area and household ownership levels was undertaken. Statistics from the 2006 census showed that the majority of people, 42.6%, earn $20,000 or less per annum, while only 14.9% earn over $50,000. Household ownership levels are low with only 53% of dwellings owned (either with or without a mortgage). The lack of home ownership and low level incomes means that a housing association that offers shared ownership schemes would be appropriate for this area of Auckland.

4.4 SITE

4.4.1 An Overview of Auckland’s Urban History

From its founding in 1840 the urban form of Auckland has evolved in terms of density, land area and built form. As of 2010 Auckland is home to 1.4 million people, the largest urban area in New Zealand. Typographical constraints, including the Waitemata and Manukau harbours, large volcanic fields, and mountains ranges, have influenced and informed the development of Auckland’s urban form, as well as government policies and plans. Urban form has been characterised by growth in suburbs, sprawl and low-density developments. Pockets of land in areas such as Glen Eden were left unoccupied due to their typographical nature. This resulted in further sprawl to find suitable land to build the typical suburban housing models of the time.

During the 1880’s and 1890’s this sprawl increased when residential development formed mainly around commercial activity, which grew along these town’s fringes. At this time suburban growth was being encouraged and by 1890 residential areas in Grey Lynn, Mt Albert and Mt Eden were being subdivided.

The first three decades of the twentieth century saw the transformation of Auckland into a ‘city.’ Families were leaving residential areas in the crowded central city, and moving to the new spacious neighbourhoods on the fringe. New suburbs were developed in the south and west, with subdividing land used to house the expanding population, and some large previously empty pockets of land were being developed. What was called ‘rural drift’ occurred and sprawling suburbanisation established itself in the 1930’s.
across the whole of the Auckland area. As the built area grew to around 13,642 hectares and the population growth slowed, the density lowered to 18 people per hectare.

The increased reliance on vehicles during the 1960s allowed the opportunity for the population to live in detached houses on large plots of land, and resulted in land unsuitable for vehicular access to remain unoccupied within existing suburbs. This led to further rapid suburban expansion and a dispersed urban form (sprawl) during the mid-twentieth century. “The form and structure of metropolitan Auckland through the years has been largely determined by developments in urban areas and suburban transportation.”

Towns were continuing to be built on the outlying fringes of the city, with no thought to the impact of the resulting sprawl.

Figure 4.2: Auckland’s Priority Transport Projects (2012 – 2042) showing Existing Networks and Future Developments

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4.4.2 An Overview of Current Auckland Planning Policies

The current urban form of Auckland is dominated by low density housing. In 2006 75% of private dwellings were detached houses, with the remaining 25% made up of flats and apartments. However, new planning policies aim to tackle the problems that have arisen through sprawl and because of the expected population increase.

The increase of Auckland’s population is expected to rise significantly over the next thirty years, to between 2.2 and 2.5 million. “The environmental consequences and range of costs associated with a larger, more sprawling city (including transport, water and wastewater infrastructure), support the challenge for Auckland to create opportunity for more intensive living and working environments.”

The expected population growth in Auckland means that dwellings for an additional 700,000 to 900,000 residents will be needed, with at least 75% of this future growth accommodated within the MUL (Metropolitan Urban Limit). The Regional Growth Strategy (RGS) aims to create “a compact urban form, with most growth within existing metropolitan area focused around town centres and major transport routes to create higher densities communities.”

The Auckland Draft Plan 2011 has set out the following strategic targets for growth in Auckland: 100,000 new dwellings are to be provided in the period from 2012 to 2022, 170,000 from 2022 to 2032, and 130,000 in the period from 2032 to 2042.

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24 Auckland Regional Council, A Brief History of Auckland’s Urban Form, 23.
4.4.3 Site Selection

In order to maximise the use of land available within the MUL, and meet the future growth targets, this thesis aims to develop ways of using the vacant plots of land dispersed throughout current Auckland suburbs to build housing at higher densities. The RGS is particularly encouraging growth in and around metropolitan and town centres. A town centre is defined by the RGS as a local hub for communities that provides a range of retail and business services, and community facilities, with capacity for accommodating residential and business development. In the west of Auckland future development will be focused in two main areas: the existing western transit corridor running through from New Lynn to Westgate, and a Henderson to Westgate corridor. Town centres sitting within this area include Glen Eden, Sunnyvale, Ranui, Hobsonville and Te Atatu Peninsula, with priority placed on Henderson and Glen Eden.

Glen Eden has been prioritised as a main centre for development over the next few years. The town sits in the centre of the main transit route from New Lynn to Henderson, and with its high capacity for future growth in social and commercial infrastructure there is an expectation of significant population increases, “Growth Management Strategy for Waitakere City identifies Glen Eden as a growth node and anticipates that the population for Glen Eden will see increases of up to 70%. “

Although Glen Eden has been placed high on the priorities list for residential intensification, development has not been undertaken in the area because the nature of the typography deems building the standard suburban model too difficult. Glen Eden is made up of hills and valleys, and most areas where large valleys are present have been left undeveloped and can be found throughout the existing urban form. This thesis will study the ways of using these sites, and offer a solution that can be adapted throughout Glen Eden to begin the intensification of the area.

The specific site in Glen Eden was chosen through observation and after determining its suitability using appropriate external environment standards from the United Kingdom’s *Scheme Development Standards* (SDS). This list is used to determine a standard housing quality, and includes factors such as site location (to local amenities and within the suburban community), accessibility (pedestrian and vehicular), site restrictions, density restrictions, the provision of public spaces, and the provision of a comfortable level of privacy.

### 4.4.4 Selected Site

The chosen site, on Pleasant Road in Glen Eden, consists of two residential sections with an area of 1.8 hectares. The site is located approximately one kilometre from Glen Eden’s main retail and commercial district, and train line. A number of public spaces, educational facilities, and community facilities can also be found within reasonable walking distance of the site (one kilometre).
Figure 4.6: Site Location (Glen Eden)

Figure 4.7: Site Images
4.4.5 Site Analysis

The site is located off Pleasant Road, which runs off Glen Eden’s main arterial road (West Coast Road). The appropriateness of the site for the project was undertaken by using the Scheme Development Standards (SDS) criteria for external environment. Approximately one kilometre from the area’s main retail and commercial district, the site is within walking distance to a high number of local amenities. Numerous parks, schools, sports and activity clubs, and transport routes can be found in the site’s immediate surroundings. These public amenities are well connected, with a number of pedestrian (as well of vehicular) routes connecting the spaces and facilities. However, the area directly surrounding the site has a notable lack of these social connections.

The site itself is framed by residential sections, subdivided in the 1960’s with an average plot area of 500m². The houses of the area are typical of Auckland suburbs: weatherboard or brick, and mostly one storey units. The density of the area is 13dph.

Two plots of land, 47a and 49a Pleasant Road, have been combined to create a total site area of 1.8 hectares. Section 47a has always been used for residential purposes with the current house on site being the only house built on the section. The adjacent plot of land, 49a, has never been occupied and has remained empty since the founding of Glen Eden.
The sections are undeveloped due to their typographical nature. The east side of the site slopes into two valleys, which drop down over fifteen metres (across a span of 100 metres) and face towards the west. These valleys create a natural water drainage system, which should be taken into consideration during the design process. All together the site slopes down over thirty metres across a span of 200 metres.

The unoccupied space of this suburban block has been dictated by these valleys, which results in the site becoming almost completely landlocked, with only one current access point. Access onto the site comes from the east (Pleasant Road), and the driveway is currently used by the house occupying the section; however; opportunities exist for the inclusion of shared access ways (vehicular) with neighbouring sections, the extension of surrounding roads into the site, and the introduction of pedestrian access points throughout the site. Because of the typography and limited access into the site this area of land is not worth much. This allows the design of the housing more freedom in terms of construction and costs.

The house existing on the site will be demolished, as well the house occupying 51B Pleasant Road. The removal of this house allows the site shape to become more regular and opens up opportunities for vehicular access.
5.0 DESIGN PROCESS

The design process was initially directed towards the master planning of the development, and testing density levels and planning strategies. A number of planning concepts were investigated, with one concept being chosen and developed further through research and design. This conceptual idea was then extended into the design of the individual dwelling units, and also extended out into the surrounding residential context.

The outcome was informed by social theories, architectural precedents, density policies and research through design. The overall objective was to create a design inspired by its context and site conditions, and provide a balance between community identity and individual identity.
5.1 MASTER PLAN

5.1.1 Density Exploration

Before approaching the design for site layout a density exploration of the immediate site surroundings was undertaken. The site is located in the centre of a residential block in Glen Eden, and the subdivided sections range in size from 500m² to 250m²; however, most of the dwellings are of a similar size (an average of 150m²). These dwellings create a suburban density of 13dph, which is a representative of densities in suburbs throughout Auckland. This result provides an idea of the social independence the residents of this area are accustomed too. With large sections and relatively small dwellings, there is a high amount of private space and a low level of social interaction. This exploration will influence the density level that can be comfortably integrated without negatively affecting the surrounding residential context.
An investigation into the level of density achievable on the site was also undertaken. Initially this study looked at a range of densities (approximately 100dph, 60dph, 50dph, 40dph and 30dph) to discover what level would be appropriate for this particular site. Each density was converted into a building footprint and placed on the site at one, two and three storeys. At two storeys 100dph covered half the site, and because of the site’s residential location, typography, and the need to include a large amount of public space and numerous access routes across the site, a density this high was ruled out.

30dph to 60dph was decided from this exploration as the range of density that could be expected to be achieved on this site. A density in this range means that the design can be integrated comfortably into its context without impacting too strongly on the existing residential area. Through further research, and concept and development design, this number is subsequently defined.
5.1.2 Preliminary Concepts

During the preliminary conceptual design phase there were two main design approaches that were investigated: a regimented site layout that drew upon the existing residential modules surrounding the site, and an approach that allowed the site and its typography to dictate the path of design.

The first concept placed the dwellings in straight lines representative of the surrounding residential dwellings and road networks that follow a distinct pattern. This grid-like concept was investigated to see if an existing low-density suburban model could be adapted to a higher density for this site, and also to provide the eventual residents with a social solution that is familiar. However, this concept could not use the site in the most advantageous way, as the linear alignment created an unrealistic solution (in terms of economic and environmental sustainability) and meant a disregard for the site conditions (typography and hydrography), which is exactly why this site has not been developed.

The second concept was to allow the typography of the site to drive the design. The sloping hills and valleys were used to direct the orientation and level of each dwelling (at this stage represented by a 100m² building footprint) and also the overall composition of the site layout. This would result in a strong relationship between the natural environment and the form of the dwellings.

This second design concept was selected and developed further as it offered a direct response to the typography and therefore, could address the issues of building on difficult sites throughout Auckland suburbia.
5.1.3 Site Arrangement Development

Aspects that strongly dictated the initial placement of the housing onto the site include: the existing access point, the valley that runs from the south centre of the site down through the west of the site, the steep incline on the north-west of the site, and the opportunity to provide another access point on the south-east of the site. These directives resulted in a conceptual layout that followed the contours across the site, from north to south and north to west.

The housing was broken into segments of varying sizes and also into individual entities. Various scenarios were approached from the implementation of an apartment block, to individual dwellings that reflect the independence of the surrounding residential houses. The result was a number of housing blocks placed along the contours.

However, this did not show a high level of integration between the site and the design. The layout was then developed so that each separate dwelling followed the contour beneath it, and then into fragmented clusters of dwellings that follow the contour they are directly placed upon. This decision was influenced by the issues surrounding building each dwelling independent of its neighbours, including problems concerning access levels into each dwelling, privacy and the issue of overlooking and construction costs.

Designing each small cluster to fit with the summarised direction and level of the contour provided a medium, and eased access into dwellings and site circulation.
The visual connection from the top of the site to the bottom is kept by introducing these fragmented clusters of housing that allow for views down and across the site. These spaces between the clusters also provide direct pedestrian routes through the site and small intimate public spaces that will be developed for the residents use.

Taking the concept of drawing on the sites typography a step further, shifting the dwellings to follow the shape of the contours was then explored. The dwellings step forward and backwards following not only the direction of the contours, but also the shape. This stepping action allows the site conditions to directly drive the placement of each individual dwelling unit and results in a character unique to each dwelling. Each has a distinct view, and different opportunities and levels of interaction with neighbouring dwellings and public open spaces. However, problems arise in regards to privacy (overlooking) and orientation.

In response the dwellings have been adjusted taking into consideration: access (vehicular and pedestrian), orientation, view, privacy, private open spaces, and in some cases ease of construction. Because of the difficulty of building on this site some of the dwellings have been shifted forwards or backwards to sit on a contour within a comfortable range of the dwellings in the same cluster. This allows for a lower level of site excavation, and therefore, retention of the site’s character.
5.1.4 Vehicular Access and Circulation

Vehicular access was originally restricted to one driveway at the east end of the site. This driveway offered access to the house on the north section (47a) and will act as the main vehicular access point into and out of the housing development. However, the introduction of an additional entry point is needed if the development is to successfully sustain a medium density.

The driveway shared with neighbouring residential sections 53A and 53B Pleasant Road provides an opportunity for the introduction of a second access point at this end of the site. As the driveway is fairly narrow it will serve as an exit only and therefore reduce any congestion caused by vehicles trying to pass each other going in and out of the development. It will also reduce the amount of traffic passing the houses that share the driveway. This shared driveway was chosen over the option of using the shared driveway that the south section of the site already shares with four other dwellings, in order to reduce the amount of traffic that would pass 49 Pleasant Road and eliminate traffic passing the house on both sides.

Before the design of the internal road structure was approached an exploration into the gradient of the site was undertaken. This exploration provided an idea of where roads could be placed to adhere to principles and regulations, and also eliminated numerous possible vehicular routes throughout the site. The gradient of particular areas of the site meant that a road could not provide access across the entire site without adding to the road in length. Scenarios were tested where the road wound down the contours in different ways to achieve the length needed to keep the slope of the road appropriate (rise/run = approximately 1:8).
A solution was investigated through the analysis of precedents, such as the Raurimu Spiral Railway. The railway needed to cover a site gradient of 1:25, so a horseshoe design was devised where the track spirals around the contours and crosses over itself. However, the implementation of this method meant the site in Glen Eden became dominated by vehicle access and movement.

A third access point was introduced at the west end of the site to eliminate the need for the road to run across the entire site and minimise the space used for this purpose. This access point connects to the site from a private road and will extend the cul-de-sac of Terra Nova Street into the site. Although this will increase the amount of traffic passing through the cul-de-sac, it will balance out the density of traffic throughout the developed site and reduce the traffic accessing the site from Pleasant Road. Balancing the vehicular connections into the site also opens up the centre of the site to purely pedestrian movement.
The addition of this access point meant the road layout could then be broken into two sections that provide direct access to the housing clusters at each end of the site, and the dwellings were then shifted to allow for a stronger relationship. Each road filters out at their respective ends to encourage pedestrian movement across the site, and the reduction of space used for vehicular movement also means that larger public spaces can be introduced. In between the dwelling clusters the roads follow the height of a particular contour to minimise the gradient and reduce construction difficulties.

Eliminating vehicular access to some dwellings was also considered, but due to the typography of the site this proved unrealistic as service vehicles would still need access to the dwellings and the current reliance on vehicles in Auckland dictates the provision of parking.
5.1.5 Pedestrian Access and Circulation

Implementation of pedestrian routes throughout the site, to link the various public open spaces and to encourage interaction between the housing clusters at either end of the site, was explored. The placement of these routes has been derived from the typography, the layout of the dwellings, and the creation of connections between the clusters and the open public spaces.

The routes border the roads and dwelling boundaries, providing direct pedestrian access to every individual dwelling. However, privacy issues arise in regards to the distance of these routes to internal private spaces. The pedestrian routes have then been shifted away from the dwellings slightly, with the inclusion of a narrow transition space that creates a border between private and public.

These routes have been located to run through the fragmented dwelling clusters, providing transitional spaces for side entry into the dwellings and create a range of pedestrian routes throughout the site. These routes provide ease of access through the site; allowing the pedestrian to use any configuration of routes to direct them depending on their destination. The vertical distribution of these lanes also draws on the conceptual gesture of stepping down the site according to its typography. The routes in between the clusters demonstrate this through a series of wide public staircases connected by public courtyard spaces. At this stage of design, connections between these routes and the public spaces need to be improved, as well as the definition of spaces between the dwellings to create a stronger relationship between these routes and the surrounding context.
The pedestrian routes through the site have been modified to extend and connect the site with its wider context. The position of these external access points into the site are drawn from the positions of the internal pedestrian lanes and vehicular access points. A comfortable amount of space for these lanes also needs to be found between surrounding residences.
5.1.6 Further Site Arrangement Development

At this stage of design the density of the development sits around 60 to 70dph. However, at this density there is a lack of comfortable distance between the clusters of housing and a lack of substantial space for the development of public open spaces (as both pedestrian and vehicular access routes will have to occupy most of the space between the clusters). There is also an uncomfortable level of dwellings on the site in relation to the surrounding residential area, and the idea of ‘crowding’ could negatively affect the social integration of the development with its context, which is critical in achieving a successful community identity.

The level of density and number of dwellings that occupied the site was further explored through existing precedents. Siedlung Halen, designed by Atelier 5, was particularly influential when balancing the level of density with the provision of public spaces, and the Kingo Housing development also showed a restraint in the level of density achieved in favour of public spaces that integrate the community. The knowledge gained through the study of precedents was then incorporated into the design to offer a higher level of balance between the dwellings and open spaces.

Exploration through research and design determined the need for larger public spaces, and wider areas between dwelling clusters to ensure privacy. The housing clusters have become more fragmented, allowing for more freedom in orientation and position, and more opportunities for side access and public use of the space.
The amount of housing on the north side of the site has been decreased due to the resulting orientation of the dwellings, and space and privacy issues between separate dwellings and clusters. The implementation of site features (such as the wetlands), and the introduction of vehicular and pedestrian access points has resulted in the density of the development lowering to between 35dph and 50dph (depending on the mix of dwelling size). This decrease in density, and therefore, traffic levels and congestion eliminates the need for a second exit to the east of the site. However, the site arrangement means including this entry is a future possibility.

This design phase also includes the provision of private external open spaces for the dwellings. These are located either at the front or the rear of each dwelling. However, privacy became an issue due to the fact that each dwelling sat on an independent contour and some spaces overlooked others. The response was each dwelling cluster on the same contour to maximise privacy between these spaces. This development phase also explored the slight stepping and shifting of the individual dwellings back and forth to alleviate some degree of overlooking. The dwellings have been setback further from the site boundaries after taking into consideration neighbouring sections and the lack of space initially provided for the private open areas.

The inclusion of public open spaces is also approached. The details of the open spaces are derived from the typography and the dwelling layout. Large open spaces have been created in between the dwelling groups, while smaller spaces have been created in between the dwelling clusters. The idea in including a variety of spaces is to create unique relationships and associations between different users and groups.
The spaces are located strategically throughout the site to encourage interaction between the residents of each dwelling cluster, and to also encourage residents from the surrounding residential sections into the spaces. Initially the forms of these spaces were derived from the negative area surrounding the dwellings. However, the awkward size and shape of these spaces did not encourage use, and a higher level of priority needed to be placed on the design of these spaces, balanced with the arrangement of the dwellings on site.

It was important that all the public areas were connected to the internal pedestrian routes, and were positioned to be accessible by multiple routes across and into the site. This analysis impacted on the placement of the dwelling clusters, and they were shifted accordingly and readjusted to the typography. Several smaller public spaces were developed in between the dwelling clusters.

The valley that runs from the south centre of the site down through the west of the site and the steep incline of the north-west side meant that these areas could not be built on, when sustainability of the natural environment and economic issues were considered. These areas could then be developed into open spaces; however, the typography narrows the possibilities of their use. The valley forms a natural water drainage system, and an exploration into how this area of the site could be beneficial to the development resulted in the implementation of a series of wetlands that direct excess water through the site. The form of these areas was then determined by the typography and the housing layout.
5.2 DWELLING DESIGN

5.2.1 Demographics

To determine the appropriate dwelling size for this site, Glen Eden East’s demographics from the most recent census (2006) were analysed. Although a housing association would not restrict residents who come from other areas of Auckland investing and buying into this development, providing housing types and sizes that are needed in this particular suburb ensures the current and future sustainability of the development. To provide appropriate housing types for this area data recording age population distribution, marital status, and family and household types was analysed.

From exploring the data available it is clear that there is a high number of residents aged 65 and over living in Glen Eden (10.5%). There are also a large number of families with children, single parent families and couples living in this area, with an average household occupancy of 2.7 people.

This range means that to build a stable and sustainable development a number of dwelling sizes need to be provided to cater to single person, couples and family households. Dwellings with a range of one to five bedrooms will therefore be provided, with the option of converting spaces into workshops or alternative living areas.
5.2.2 Preliminary Concepts

The design of the individual dwelling units continues the concept of drawing on the typography to direct the architecture. After being situated on the site according to the flow and direction of the contours, the design of the individual dwelling form follows the slope of the contours, stepping down the site.

The house type developed is based on the dual aspect narrow-fronted model in terrace form. The dwellings have been elongated down the site, rather than across, to capitalise on orientation to the sun, light and view, and also maximise density. The detailed form would then be determined through the design of the internal spaces.

The layout of the dwellings will be planned with the intention of creating a hierarchy of different living spaces, both internally and externally, through the conceptual idea of stepping up or down into different spaces.
5.2.3 Internal Circulation

The possible location and configuration of the circulation system within the dwellings was investigated. The location of the system will place constraints on the internal room layout and the ability to split the occupancy of the dwelling. The system is crucial in determining the social experiences within the dwelling: dictating how certain areas will be used depending on their relationship to each other formed through this system.

In order to determine the most effective placement of the circulation system scenarios where the system was situated in different locations and orientations throughout the dwelling, connecting different spaces, were analysed.

To evenly divide the dwelling and avoid a segregation of some internal spaces a centralised circulation system was deemed the most effective. This placement creates a central point for internal interaction, and connecting the different levels in the centre of the plan allows for form and distribution opportunities that reflect the typography. The orientation of the system reflects that of the dwelling orientation.
To discover the most appropriate way to distribute people vertically through the dwelling multiple staircase designs were investigated including full flights, split staircases, singular units and multiple units. Issues such as space used, relation to the site typography, and the ability to split the circulation system in split occupancy situations arose.

Full flights of stairs lacked efficiency in use of space, and resulted in no social connections between levels and rooms. Implementing multiple stair cases throughout the dwelling also resulted in too much space being dedicated to circulation. Split staircases, resulting in split level housing, were determined as the most efficient in terms of saving internal space and reducing the distance between different sections of the dwelling. The system also allows interaction between levels that a full flight of stairs would not, and use the height difference of the site in the most advantageous way. The staircase design also creates a void that distributes light and sun throughout the building.

Figure 5.30: Circulation Location and Configuration Development
In order to address the issue of slope, the split staircases were developed further. Initially the staircases were split in half, and then in response to the site were split into a ratio of around 1:3. In order to address the typography of the site, each individual dwellings circulation system would need to be modified to fit with the particular area of site it is situated on. This system also allows split occupancy.
5.2.4 Spatial Arrangement

This phase of design development explores the spatial arrangement of the internal spaces in relation to the main circulation route and to one another. Room size, orientation, placement within the whole dwelling, private open spaces, levels of privacy and interaction between dwelling occupants and neighbouring dwellings, and the level of connection between the internal rooms and nearby public open spaces were all considered. The dwelling frontage width was determined by the space needed internally for the circulation system and an adjacent room. This resulted in a width of 6.2 metres.

The site arrangement and placement of the dwellings in relation to vehicular and pedestrian movement and parking, results in the need for the main access into the dwellings to be located at either the front or the rear ground level, depending of the dwelling’s relation to the road (whether it sits above or below the road). Access needs to be providing at the opposite end of the dwelling into the open private space, and access also needs to be considered for those dwellings that will be split occupancy.

Initially, the entire length of each level was dedicated to one purpose: indoor living, outdoor living or sleeping. However, this constrained both the room sizes and the form of the dwellings. In order to accommodate larger typologies and split occupancies, rooms were split into groups depending on their use and their subsequent placement was investigated.

Figure 5.33: Internal Spatial Arrangement Explorations
Living areas such as the kitchen, dining room, living room and an outdoor courtyard space occupy one level, while the majority of the bedrooms and utility rooms occupy another. A bedroom and bathroom were sectioned off to create another level and to provide opportunities to split the dwelling into two. A large space was designated at the top level of the dwelling to accommodate either an open living space or master bedroom suite depending on the occupants' needs. This designation of open space allowed for internal personalisation of each dwelling.

The arrangement of these rooms on each level was then determined by factors including access routes into and through the dwelling, appropriate room sizes, orientation to the sun, and natural light.

The length of each level was determined through appropriate room sizes, and the balance of the form in section. Initial internal plans resulted in an un-proportionate external form; therefore, rooms were compressed or extended slightly to balance the relationship between the form and its context, while still maintaining habitable size.

Through further design development issues that were addressed include the size of the living spaces and their connection to the circulation system, levels of sunlight penetrating into the rear bedroom space, and access from the internal living spaces to the external living space. The circulation system arrangement was also developed further in order to maximise its efficiency.
Figure 5.36: Internal Spatial Arrangement and External Form of Dwelling
The inclusion of private external space was also explored, as well as the provision of some type of external space that would connect the dwellings to each other and allow social interactions between the residents. These spaces would be semi-public, creating spaces reserved for the residents of the dwellings. The inclusion of a backyard was also explored.

While the idea of including a private internal courtyard meant that the residents were provided with more living space, including the external space in the centre of the dwelling also meant that habitable rooms could be placed in the middle of the plan. This opened up different opportunities for room placement and arrangement. However, the relationship between this external space and the circulation system located through the vertical centre of the dwelling created several problems. In order to eliminate any excess space resulting from the combination of these spaces, the circulation system was shifted away from the external courtyard so they no longer ran parallel to one another. Instead, to encourage day-to-day living in the external space, the living spaces have been extended and arranged as an extension of the internal living spaces.

In the case of split occupancy this exterior courtyard is replaced with a void that runs vertically through the centre of the building. This eliminates overlooking by residents in the top dwelling into the bottom dwelling, and provides more daylight opportunities for the rear bedroom on the second level.
The aim in including semi-private terraced spaces was to provide residents with a number of different external spaces, but also to encourage some form of interaction between neighbours at a different level. The terraced spaces were designed to offer a space where residents could gather and be social, separately from the entire dwelling cluster.

The inclusion of a backyard was initiated by the standard suburban models and what residents of Auckland are comfortable with in regards to open grassed space. The size of the site allows for a large amount of space to be dedicated to this purpose, but because of the typographical nature of the site and the resulting dwelling layout providing each dwelling with a private backyard is not feasible. However, the inclusion of public grassed spaces between these dwellings negates this to a degree.
5.2.5 Provision of Parking Space

This phase of design addresses the issue of providing parking spaces to each individual dwelling. Although the development promotes pedestrian use, due to Auckland’s sprawling nature, the consequential reliance on the personal car and the current conditions of public transport in Auckland, it was determined that parking spaces for vehicles would be provided. Although there are plans to reduce the amount of vehicular use in Auckland in the future, in order to design a sustainable development for the current conditions vehicles have been factored into the design.

Each dwelling is provided with space for two vehicles; however, creating these as internal spaces limits future possibilities for how the space could be used. To ensure future proofing and to provide residents with a range of open spaces, the parking area has been modified and developed into an external courtyard space to the front and a garden space to the rear of the property (depending on the dwellings relation to the road). These spaces branch off from the main roads, and to give the vehicles some form of protection from the environment the design of the dwelling means it overhangs this space. This overhang also provides sheltered access into the dwellings. Instead of adding additional parking spaces for split occupancies it was determined that the parking spaces already provided would be shared between the residents.
5.2.6 Dwelling Clusters

After analysing the demographics and due to the changing life cycle, of both the individual family unit and the life cycle of a town/city, the idea of being able to incorporate all dwelling sizes into one general dwelling design was investigated. This would decrease building costs, while providing opportunities for a range of residents to occupy the development and interact with each other, rather than being segregated into groups depending on their social status. To achieve this each dwelling cluster will be made up of a mix of dwelling sizes that will create a social balance across the site, and help to retain the natural social interactions that are familiar to suburban living in Auckland. The orientation and placement of the dwelling types will be directed by the typography, orientation (to sun and light) and how each dwelling type can be integrated with the others.

Although the dwelling clusters contain a range of dwelling sizes inviting a variety of residents, the aim of these clusters is to create smaller cohesive communities within the larger development, not unlike some communities present in old suburban models. These smaller groups will be centred around the public open spaces located in between the fragmented clusters and also around the semi-private spaces provided to each occupancy. The size of the clusters can be expected to influence the social behaviour of the occupants. Initially the clusters were made up of a large number of dwellings, but in order to create a higher level of intimacy the number of dwellings in each cluster was reduced and ranges from two to six. This results in a variety of relationships forming between families, couples and one person occupancies, and allows the residents to interact on different levels.
5.2.7 House Types

At this stage of development the dwelling has been designed with the thought that the occupancy can be split in two; however, this section of development tests the feasibility of this and different ways of splitting the tenancy of the dwelling to accommodate a variety of different users.

Issues such as access (both vehicular and pedestrian), circulation and cluster formation, limits the number and placement of split tenancies on the site. However, to create a variation in the number of bedrooms other dwellings among the cluster offer, the idea of adding and subtracting rooms from adjacent units was investigated. Although this provides a range of dwelling types, the constraints of the site and the position of the dwellings upon it limits the opportunities where this can occur.

Figure 5.44: Plan Split into Two Dwellings

Figure 5.45: Addition/Subtraction of Bedrooms from Neighbouring Units to Create Five Bedroom Dwellings
Figure 5.46: One Bedroom Dwelling

Figure 5.47: Two Bedroom Dwelling which sits upon the One Bedroom Dwelling

Figure 5.48: Four Bedroom Dwelling

Figure 5.49: 2 Two Bedroom Dwellings or a Five Bedroom Dwelling
Shared access was considered, but to maintain a comfortable level of privacy between the occupants it was determined that a second access point should be introduced to enable dual occupancy. Separate access increases the individual occupant’s sense of ownership, and reduces the immediate response that shared occupancy means a compromise in terms of privacy.

An investigation was then carried out to determine how far residents of split occupancies would have to walk in order to access their dwellings from where parking is provided. Initially the access located at the rear of the dwelling into the private spaces was developed into the second entry point; however, this required the residents to walk the entire length of the dwellings from the parking area provided. To reduce this distance, secondary access was moved to the side of the dwellings. This secondary access is only provided to the dwellings of some clusters, and results in the retention of separate access to the rear of the property.
6.0 DESIGN OUTCOMES

Site Arrangement

To ensure the design fulfilled the objectives of this project the spatial configuration and form was a direct response to the site conditions. This response to context, typography, light, sun, aspect, access and privacy anchors the design to the site. The dwellings have been spatially arranged to follow the natural directions, shape and heights defined by the slopes and valleys across the site, while taking into consideration privacy, house types, relationships between dwellings and dwelling clusters, and the implementation of various open spaces (both private and public). This rejection of repetition creates a distinction among the dwellings in the development, while the form and use of materials help to create a cohesive community of housing that rejects complete social isolation common in Auckland suburbs.

Public Open Spaces

The spatial arrangement promotes pedestrian access and movement through various community based public spaces that are accessible to the wider public. These spaces, combined with the semi-private and internal private spaces of the dwellings, create a hierarchy of open spaces and allow different levels of interaction. The functions of these spaces were allocated according to the demographics of the residential area, with the aim to draw all stages of the life cycle into the development. The spaces provided include a large open grassed area, courtyard spaces, and a children’s play area.

The larger open spaces have been designed and arranged to connect the development to its wider residential context, with numerous pedestrian access points located along the site boundaries leading into these spaces. Smaller intimate courtyard spaces are located throughout the development, their purpose to bring the residents together and interacting amongst themselves at a higher level of intimacy. These spaces also serve as transitional spaces between the private dwellings and the larger public areas. While the spaces created by the fragmentation of the dwelling clusters have been developed into small courtyard spaces, the spaces at the end of the clusters have been used as access routes or small grassed areas.

Wetlands

The valley that runs throughout the site creates a natural water drainage system and this system has been enhanced and turned into a site feature. A series of small wetlands were developed along the valley and lead into a holding pond that has been located at the lowest end of the site. This pond holds any excess water that flows down the valley that cannot be immediately drained by the existing drainage system, and a bank has been placed on the west side to create an edge to the pond and stop any water from continuing to drain into neighbouring sections. The shape of the wetlands and the pond has been derived from the contours and the placement of the surrounding dwellings.
Modes of Movement

The objective was to create quality community spaces, and then develop a network of traffic that links them together, through both vehicular and pedestrian movement.

Vehicular access to the site is located at each end (east and west) in order to balance and distribute traffic evenly across the site. The simplified road layout has been designed in order to promote use of the pedestrian routes and to encourage the use of the public transport available in the area. Areas along these cul-de-sacs allow for a small number of visitor parking spaces. The amount provided has been kept to a minimum to extend encouragement of pedestrian use of the site into the wider community. Limited parking has also been provided for the residents to satisfy the current expectations of the housing market.

The pedestrian routes are important in creating social integration between the different areas of the development, and also offer a level of integration with the site’s residential surroundings. The most important connection for this block was to the north, so routes have been implemented here, to connect the site with Glen Eden’s main retail and commercial district.

Dwelling Design

The design intentions of the site arrangement are reflected in the design and planning of the individual dwelling units: to create a hierarchy of different internal and external living spaces, to offer a mix of house sizes to encourage a range of residents, and to draw on the typography to drive the outcome of the form.

A range of household sizes have been designed for the varying demographic household types of the area. One, two, three, four and five bedroom houses are mixed throughout the dwelling clusters to support the interaction between people from all life cycle stages, to avoid segregation of groups and to ensure flexibility in ownership.

Internal Circulation

The split-level circulation system provides vertical distribution throughout the dwelling through multiple landings. The stairway leads from a lobby/entrance space on the lower ground floor, which is accessed through the external parking/courtyard space, and climbs through the centre of the house. Each landing leads into a separate section of the house (sleeping, living), and these sections have been configured into a hierarchy that reflects different levels of privacy. The vertical configuration of the system allows connections between spaces on each level, and drives the internal spatial arrangement of rooms.

Internal Spatial Arrangement

The internal spatial configuration was a response to the site and to necessary internal adjacencies. Each level of the dwelling has been divided into functions and the layout is determined by the degree of privacy and connection each level requires, and also through flexibility in
plan and section. The rooms have also been positioned to maximise passive sustainability.

An entrance lobby at ground level leads into a bedroom and bathroom on the next. The third level is dedicated to living spaces, both internal and external. This level forms the horizontal centre, and the overall form of the dwelling has been designed to maximise the amount of living space available. The next level contains two bedrooms, a bathroom, utility room and storage facilities. These spaces have been distanced from any public spaces to avoid overlooking and noise penetration. The next level provides the dwelling with a large external terrace space that allows interaction between the dwellings. This level leads into a large open space at the top of the house, the use dictated by the needs of the residents. This top floor has been designed in form as a type of lookout across the site.

*Materiality and Structure*

Timber, brick and stone are the main material and structural components used. This is a direct reflection of traditional New Zealand suburban housing, and creates a visual link between the development and its immediate context.

Due to the typography of the site and the subsequent levels of elevation retaining walls have been implemented where the dwellings cut into the slope. A cantilevered wall uses the pressure expended by the soil to stabilise itself through the inclusion of a second lever arm running horizontally through the soil. These retaining walls made from steel–reinforced mortared masonry must be constructed on site, but save construction costs due to the minimal amount of material used (in comparison to other retaining wall systems).

The standardisation through design of the remaining structural components will help reduce construction costs, and enable the components to be built off site, eliminating some access problems caused by the typography. Despite these economies in construction this will be an expensive site to build on. However, the site acquisition costs are nil or nominal, and in effect the saving in land cost combined with the non-profit housing association client justifies this investment in construction.
7.0 FUTURE DIRECTIONS

An investigation into the development of land surrounding the site could open up numerous design possibilities. The housing association could extend the development and further connect it with its residential context by buying any surrounding properties on the market with any assets gained through rent and trading surplus. The provision of properties bordering the site could provide an opportunity for a third main access point, from which other areas of the site would become open to development.

An exploration and analysis into similar sites in the area could be undertaken in order to explore any possible connections from this development to these sites. The design solution is site specific; however, the general conceptual design could be modified to fit these sites, creating interconnected communities throughout the suburb. However, each site will have its own limitations and a high level of consideration will be required for each new site, to ensure high levels of privacy and that the provision of communal spaces are possible.
8.0 CONCLUSION

The purpose of this research design project was to design medium density infill housing on an unused and difficult site in Auckland suburbia, taking into consideration the social aspects of living at medium densities, and current government density and planning policies for Auckland.

Research through design, precedents and literature addressed the notion of what higher density housing can result in architecturally, and the issue of perceived loss of both privacy and community thought inevitable when designing at higher densities. Siedlung Halen, Kingo Housing and the Rokko Complex I demonstrate how higher densities built on difficult sites to generate communities and achieve sustainable development can also produce great architecture. Utzon’s courtyard housing typology and the community driven design of Siedlung Halen are examples which have proved, over fifty years without change that this housing typology which has resulted in high value retention, strong communities, sustainability, and value of design can serve as a typological model for New Zealand.

The design produced illustrates how residential developments can achieve social interaction at various levels, at a higher density than the regular suburban model used in the past and in recent housing developments produced to meet market demand rather than social needs. Approaching the housing design with the individual and community as a core architectural objective allows the generation of a typology that can be used to intensify Auckland, “Underpinning the formation of a successful modern social order composed of integrated individuals is some form of communal association.” 26

The optimum density was investigated and determined, for sites such as the one developed, as between 35dph and 55dph. This enables the development to sit comfortably within its surrounding residential environment, while also retaining high levels of privacy and allowing for the formation of a communal identity. This density level also satisfies Auckland’s current density policies and future objectives.

The selected site illustrated the typical problems of building on sites of this nature. A variety of design concepts driven by both the site and the program were explored to examine the architectural possibilities available. The resulting design solution is a functional and efficient use of the site, which draws on the typographical nature of the site for inspiration. This architectural solution provides a practical design that can be adapted to similar suburban sites throughout Auckland which are, in many cases, steep slopes with difficult orientation. However, each individual site will have its own constraints, and the density levels achievable on each will vary accordingly.

26 Michael Bounds, Urban Social Theory – Self, City and Society (Australia: Oxford University Press, 2004), 94.
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APPENDIX 1 - SOCIAL THEORY ANALYSIS

Identity can be defined as self-expression, uniqueness, a definable individual entity, or the ability for a person or a group to be, or continue to be, itself. The first instance of use occurred in the 17th century, when the 'Enlightenment Subject' defined “the conception of the human person as a fully centred, unified individual, endowed with the capacities of reason, consciousness and action. The essential center of the self was a person’s identity.”

It is also recognised that an individual’s identity cannot exist without connections to a wider collective of individuals: a community. “Identities cannot be self-sufficient: they are in fact instituted through the play of difference, constituted in and through their multiple relations to other identities.” This highlights the importance of the community identity, not just individual identity. Therefore, for the purpose of this thesis, the concept of identity has been separated into two categories: individual identity and the collective identity of the community.

Raymond Williams - Individual and Community

Raymond Williams helps to define individual identity and community identity in *New Keywords*, by addressing the social and cultural history of the ideas.

The individual originally meant indivisible; however, the development of the word and idea through scientific and political thought has formed a contradictory definition: individual stresses a distinction from others. The switch initially came about when the phrase ‘in the individual’ instead of ‘in general’ was introduced during the movement against Feudalism in medieval Europe. A person’s personal existence was stressed over his place in hierarchical society. Originally the term was introduced with a negative connotation in the 1830’s. Individualist’s where seen as entering into society to further their own interests without any thought towards the best interests of society, however, it developed into a concept advocating independence and self-expression.

Community refers to connections, relationships, associations, interactions between a group of people; belonging to a greater whole. A community shares the quality of holding something in common, a sense of common identity. Originally the term was used to distinguish “the body of direct relationships from the organised establishment of realm or state.”

Personal Identity vs. Social Identity

The argument over how identity is formed has created two contrasting opinions of what constitutes as individual identity: personal identity and social identity. Personal identity is an individual’s uniqueness formed separate from any influence, while the social identity of an

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28 Tony Bennett *et al.* *New Keywords: A Revised Vocabulary of Culture and Society* (Hoboken: Blackwell Publishing Ltd., 2005), 173.
29 Williams, *Keywords*, 75.
individual is formed through identifications with significant others. 
Sociologists believe it is the collection of group members and environment that define the individual, “The spatial world in which we live tells us who we are. We find ourselves within it, we respond to it and it reacts to us. By manipulating it we affirm our identity.”

Ferdinand Tonnies - Gemeinschaft and Gesellschaft

Tonnies, a community theorist, devised a theory that describes Gemeinschaft and Gesellschaft as two types of community (social groups). He uses community as a metaphor, using it to describe social changes through time: from the traditional to the modern (the evolution from the importance of society over individuals, to the opposite).

Gemeinschaft, or community, with a focus on “blood, place, and mind, or kinship, neighbourhood, and friendship,” is an association in which individuals are orientated to the large association as much if not more than to their own self-interest. While in contrast, Tonnies uses this to describe an earlier form of society organised around family and village, and to advocate community.

Gesellschaft, or society, describes associations in which the larger association never takes precedence over an individual’s self-interest. This aspect of society is based around modern systems in society and advocates the individual.

However, Tonnies’ theory relies on the assumption that all communities are generally formed the same in terms of their historical and cultural evolution, and that there are only two types of what Tonnies calls ‘actor’s will.’ The ‘essential will,’ in which a person sees their purpose as to serve their group in society (Gemeinschaft), and ‘arbitrary will’ where one sees the purpose of the society is to further their own personal interests (Gesellschaft).

Although Tonnies conceived this theory to describe the evolution of society and was describing two instances of community within it, the concepts only represent ideal types that should be understood in the abstract. He also clearly states that no society is characterised solely by one concept or the other, and describes a successful society as combining Gemeinschaft and Gesellschaft and therefore, ensuring that both the needs and interests of the individuals and of the society as a whole are satisfied. This theory encourages the distinction of hierarchy in a community and the relationships involved.

David Emile Durkheim

The French philosopher Emile Durkheim was concerned with how societies could maintain their integrity and coherence in modernity, during a time when traditions and religious ties were no longer of utmost importance to society. Durkheim’s work leans towards a sociologist’s view of identity. He states that community preceded the individual and formed the basis of individual formation, “Underpinning the formation of a successful modern social order composed of integrated

31 Nisbet, Sociological Tradition, 75. Cited by Michael Bounds, Urban Social Theory, 94.
individuals is some form of communal association."⁴² His view meant that the self was only a reflection of wider society.

Durkheim was interested in defining what a society was, how it was created, and how it was held together. He describes this as the conscience collective or collective consciousness, a moral conviction that was the moral basis of solidarity in society, “The maintenance of a moral order and solidarity in society required a new form of collective consciousness and this was paradoxically provided by individuality itself. Each of us in a complex contemporary society with a highly developed division of labour is dependent on our fellow human being and requires his or her services as he or she requires ours for mutual survival.”³³

In conclusion, Durkheim assumed that humans were essentially self-serving or ‘egotistic,’ but had beliefs and values in common that form the basis for society resulting in the integration and forming of community. This integration, the collective norms, and the emotional attachment an individual forms to culture are seen by Durkheim, as what holds society together, “The totality of beliefs and sentiments common to the average members of a society forms a determinate system with a life of its own. It can be termed the collective or common consciousness.”³⁴

Robert Nisbet - Concepts of Community

Nisbet, an American sociologist, defines community as, “...all forms of human relationships which are characterised by a high degree of intimacy, emotional depth, moral commitment, social cohesion and continuity in time. Community is founded on man conceived in his wholeness rather than in one or another of the roles, taken separately, that he may hold in a social order.”³⁵ Nisbet takes the stance that individualism denies the inherent human drive toward community, and is a follower of Emile Durkheim and his understanding of modern societal systems.

Ubuntu

The African proverb ‘I am because we are’ or ‘I am what I am because of who we all are’ embodies the concept of Ubuntu. This is the African social philosophy of living harmoniously in community, focusing on allegiances and relationships between one another in a group (tribe), with the belief that one cannot exist as a human being in isolation. In this culture the word individual does not exist, so therefore there can be no recognition of a singular human being, only the importance of the community as a whole.

Archbishop Desmond Tutu describes a person who embodies Ubuntu as, “open and available to others, does not feel threatened that others are able and good, based from a proper self-

³² Michael Bounds, Urban Social Theory – Self, City and Society (Australia: Oxford University Press, 2004), 94.
³³ Ibid., 5–6.
³⁵ Nisbet, Sociological Tradition, 47. Cited by Michael Bounds, Urban Social Theory, 93.
assurance that comes from knowing that he or she belongs in a greater whole,"36 and further, "It speaks about our interconnectedness. You can’t be human all by yourself. We think of ourselves far too frequently as just individuals, separated from one another, whereas you are connected and what you do affects the world. When you do well, it spreads out; it is for the whole of humanity."37 However, this philosophy does not detract from being able to further yourself as an individual, as Nelson Mandela explains, "Ubuntu does not mean that people should not enrich themselves. The question therefore is: Are you going to do so in order to enable the community around you to be able to improve?"38

The concept of Ubuntu can be recognised in many cultures as an important principle or value. In Botswana the equivalent is translated into Botho. "Botho defines a process for earning respect by first giving it, and to gain empowerment by empowering others. It encourages people to applaud rather than resent those who succeed."39

In western cultures, the concept relates strongly to the growing beliefs during the French Enlightenment, when one human sees his interaction with others as both for his happiness and the enrichment of the community. Since work by Baron d’Holbach, in 1770, the concept has become intertwined with principles used throughout the western world.

Robert Gifford

Gifford advocates the idea that a person’s environment and dwelling is influential in how people perceive themselves and others (identity). “People seek and create environments that support and strengthen their perceptions of themselves... We not only read information about others through their dwelling, but also ourselves. Our own dwellings and neighbourhoods create self-concepts about who we are. Where and how we live therefore affects how we see ourselves. We become in some way a person moulded by our physical environment.”40

This furthers the idea that individual identity cannot be formed separately. Its foundations are formed by its environment, and a community’s identity cannot be formed without the individual. “The connection between housing and identity goes both ways. To a certain degree we are able to create and change our physical environment, at the same time we are also influenced by the surrounding.”41 This is a reflection of the concept of Ubuntu, Tonnies’ Gemeinschaft and Gesellschaft theory, and Emile Durkheim’s principles.

Durukan Kuzu

In Phenomenological Conceptions of the “Self” and the Ontology of Architecture Durukan Kuzu discusses Heidegger and Sartre’s

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40 Robert Gifford, Environmental Psychology: Principles and Practice (Boston: Allyn and Bacon, 1997).
41 Hauge, “Housing and Identity,” 19.
theories with numerous references to theories belonging to David Appleyard, Amos Rapoport and John Turner.

Focusing on architecture as a way of identity expression or self-realisation, the text deals with the “ways architecture has been a reflection of the cultural-physical environment into which we are born or the ways architecture has been an opportunity to express our own conception of the self, which might be shaped with reference to the multiplicity of sources that cannot be bound by the cultural or historical context.” It approaches the concept of self through two discussions.

The first discussion is informed by the conceptions of self in the process of “defining the relationship between architecture and the self,” and the second argument is based on Jean Paul Sartre’s existentialist paradigm, which argues the “existence precedes the essence.” In plain words, the self is an entity that defines itself through identification with history and culture. Anthony Giddens comments, “We are not what we are, but what we make ourselves... Self-identity is not something that is just given, as a result of the continuities of the individual’s action system, but something that has to be routinely created and sustained in the reflexive activities of the individual.” Architecture is therefore a by-product of the relationship between human beings and the space surrounding them.

**Amos Rapoport**

*House, Form and Culture* discusses how culture, the environment and human behaviour affect house form. Rapoport explains that people/cultures with different attitudes and ideals respond to their varied environments differently, and this is what creates a differentiation in dwelling form. “Responses vary from place to place because of changes and differences in the interplay of social, cultural, ritual, economic and physical factors.”

Rapoport comments on the forces that “shape dwellings and give them clearly identifiable characteristics” and that one must investigate the whole environment to understand the inspiration for any dwelling.

Forces involved include the primitive, the vernacular and the tradition. Primitive addresses the influence of history: “Societies tend to be very tradition orientated. This explains the close relation between the forms and the culture in which they are embedded, and also the fact that some of the forms persist for long periods of time.” The vernacular involves how the site influences the form of a dwelling: “Working with the site... respect for other people and their houses and hence for the total

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43 Ibid., 82.
47 Ibid., vii.
48 Ibid., 4.
environment, man-made as well as natural...”49 Tradition is somewhat similar to the primitive: “The aesthetic quality is not specifically created for each house - it is traditional and handed down through the generations. Tradition has the force of a law honoured by everyone through collective assent... This approach works because there is a shared image of life, an accepted model of buildings, a small number of house types, and, finally, an accepted hierarchy and hence an accepted settlement plan.”50

Rapoport argues these forces are important in the formation of dwelling and without their influence, “Loss of common shared value system and image of the world, with a consequent loss of an accepted hierarchy... This results in a disappearance of that spirit of cooperation which makes people respect the rights of adjoining people and their buildings, and ultimately the rights of the settlement as a whole.”51 He is effectively arguing for the concepts of tradition and community; that striving for originality in dwelling form creates too many problems.

Emphasis is placed on the idea that one dwelling cannot stand separately and must be part of a greater whole, “the house cannot be seen in isolation from the settlement, but must be viewed as part of the total social and spatial system which relates the house, way of life, settlement, and even landscape.”52 This point is also argued by William Cowburn who claims, “The popular house is based on the ideal that one's home is indeed one's castle, and on a belief of independence. The house is to be as private and isolated as possible, with moatlike separation...”53

Summary

The constraints and possibilities of designing for both the individual and the community is defined through this research and these social theories, which define both individual identity and communal identity, form the social base for research by design.

49 Ibid., 5.
50 Ibid., 6.
51 Ibid., 6.
52 Ibid., 69.
APPENDIX 2 – FINAL DESIGN PRESENTATION

Figure A2.1: Context Plan

Figure A2.2: Site Plan
Figure A2.4: Dwelling Plans
Figure A2.5: Dwelling Section and Elevation
Figure A2.6: Dwelling Section
Figure A2.7: Exterior Perspective – Pedestrian Entrance to Site

Figure A2.8: Exterior Perspective – Public Courtyard
Figure A2.9: Interior Perspective - Circulation

Figure A2.10: Interior Perspective – Living Space
Figure A2.11: Site Model
Figure A2.12: Sectional Dwelling Model

Figure A2.13: Sectional Dwelling Model
Figure A2.14: Final Presentation