Modernism : A Contemporary Interpretation

Revisiting one of Auckland’s Modernist housing developments.
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This Research Project Entitled:
Modernism: A Contemporary Interpretation (revisiting one of Auckland’s Modernist housing developments)
is submitted in partial fulfilment for the requirements of the Unitec degree of
Masters of Architecture (Professional)

Candidates Declaration

I confirm that:
- This Research Project represents my own work;
- The contribution of supervisors and others to this work was consistent with the Unitec Regulations and Policies;
- Research for this work has been conducted in accordance with the Unitec Research Ethics Committee Policy and Procedures, and has fulfilled any requirements set for this project by the Unitec Research Ethics Committee.

Research Ethics Committee Approval Number: N/A

Candidate Signature:
.......................................... Date: 30-09-2010

Student Number: 1262798
Apartment blocks built in the post-war period for state or city council housing mostly followed the architectural precepts of the Modern Movement. Large numbers of these buildings have been demolished in the last two decades, reflecting a paradigm shift in housing design. Root causes of the move away from high-rise housing, and the justifications for costly demolitions involve both social and technical criticisms.

Modernist state-sponsored housing from the 1960s in Auckland includes the three to four storey 12 to 16 unit Star Flats. They are in particular threat of being demolished to make way for new higher density housing: most of the Star Flats are located in key inner-city areas and do not achieve densities high enough to satisfy Auckland’s intensification programme. At the same time, however, these buildings are important in the history of Auckland City’s modernist architecture.

The prospective loss of the Star Flats raises questions about to what extent we might protect the existing buildings and environments of our cities. Both for reasons of sustainability and continued social familiarity with the built environment.

This project accepts the need to increase density in city fringe areas and therefore explores how existing developments like the Star Flats can be retrofitted to meet current day expectations of inner city densities. Specifically this project investigates the ways density can be increased while maintaining quality of life, avoiding damage to heritage values, and introducing sustainable features.

This has been achieved through a master plan that re-affirms the designers original intentions: purifying the concept of pavilions in a park. While the new apartment block is a ‘contemporary interpretation’ of the Modern point block. Manipulating the form to provide a sustainable form of urban living.

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1. Introduction

“Historical sites are like a palimpsest. They are formed through different layers of overlapping fragments without erasing the traces of the past.” 1 - Maria Leus

Like many cities around the world Auckland is experiencing growth at levels never seen before. Based on current census figures Auckland looks set to increase by nearly 150,000 people in the next 20 years; that’s an addition of 20 people per week. 2 The challenge for Auckland city is how to “manage that growth and the change it brings, while still preserving the values, character and environment Aucklanders value.” 3

Historically, as the population of Auckland has increased so too has the land area covered by the city. The resultant sprawling suburban form has forced residents to live further and further from their places of work, education, and amenities. This issue of sprawl facing Auckland effects many modern cities around the world. In New Zealand the ideal ‘quatre acre dream’ is largely to blame. However sprawl can be seen as direct consequences of Modernism’s urban ideal, zoning. 4

Peter Blake, in his book Form Follows Fiasco, outlines the many ‘fantasies’ of the Modern movement but criticises zoning in particular. He describes the concept of zoning activities as the “most grotesque idea of modernism.” 5 Richard Rogers describes the resulting urban environments as ones where “the interpersonal, spontaneous interaction and exchange which is the very essence of city life” 6 is unable to occur.

This spread out population has a number of negative effects such as congestion and pollution, social isolation, declining health and community fragmentation. 7 It also means that an efficient public transport system is impossible and the chances of ‘spontaneous interaction’ occurring is drastically reduced. For this reason much recent local government policy has an emphasis on re-densification of existing areas.

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3 Ibid.
Fig. 1.3. Graffiti protesting the demolition of yet another historic building, this time the 127-year-old Butterworth’s building on High St, Dunedin.
New Urbanism is a popular urban theory that looks to increase the density of people and buildings focused around town centres and major public transport routes. A danger of this strategy is the temptation for developers to demolish the current urban fabric in favour of new, higher density schemes. Ironically this can lead to the same homogeneous and alienating landscapes that the theory wants to see eliminated.

A tendency can be seen in New Zealand to demolish existing structures with little thought of the impact this can have. There are a number of issues surrounding demolition such as the removal of vitality, variety and memory from our built environments, along with the huge material and energy wastage.

Another approach is that of urban infill. Infill is not specifically an urban theory but describes an “industry term for the development of small-scale vacant parcels of land within built-up areas”. Infill projects are also known as redevelopment or regeneration projects, which indicates their approach to increasing density.

Unlike New Urbanism these projects look to increase the density of cities by modifying or adding to the existing context and buildings rather than demolishing them. The approach recognises the importance of retaining aspects of the built environment as our cities intensify to ensure “a diverse, intense and satisfying world”.

There are environmental, social, cultural and economic benefits associated with regenerative design. A report commissioned by the Ministry for the Environment in 2008 suggests that “the development of a sustainable built environment will largely rely on retrofitting existing infrastructure and buildings”. It has been suggested that the “cultural continuity of urban environments” is crucial in enabling residents to connect with the place. The redevelopment and sustainable regeneration of existing city locations can increase the diversity of the area, both architecturally and socially, creating stronger communities.

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12 Ibid.
This project looks to test regenerative principles as a means of development for an existing site in Auckland City. The site needed to have a tangible architectural value and be located in an area where increasing density is likely. The chosen site is Freemans Bay Park, a now privately owned government built housing scheme, the Star Flats, in the inner city suburb of Freemans Bay. As the area around Freemans Bay inevitably increases in density there are a number of scenarios that could be the future of the scheme. The most likely are; one, strict restoration and conservation, two, demolition to make way for new developments, or three, increased density and redevelopment.

While strict restoration and conservation would see the retention of the Star Flats for future generations, it would not render the flats a useful addition to a growing city and would not entirely remove the threat of demolition. Obviously demolition would be the worst possible outcome for these flats, the loss of these buildings for future generations, both as heritage items, and to live in and learn from would be regrettable. To increase the density of the site through further development would ensure their retention whilst allowing an overall upgrade in housing quality.

The flat typology is becoming more relevant today as the issue of suburban sprawl becomes critical, and the density of residential areas is forced to increase. Therefore the development of the Star Flats in Freemans Bay to a density suitable to this city fringe suburb would not only ensure their retention but would also provide an opportunity to learn from what is still a great example of multi-unit housing. There is also an opportunity to demonstrate on a small scale how Modern environments can be re-invigorated.

101 Research Question
How Freemans Bay Park can be developed to suitable density levels without destroying the embodied heritage values of the scheme and the quality of life occupants currently enjoy.
102 Project Focus

From the initial research question three intertwining and sometimes conflicting strands of research can be determined. These are:

- ‘suitable density levels’. What are the principles of regenerative infill design, and how can they be implemented.
- ‘embodied heritage values’. How the design ideals of Modernism and more specifically the Star Flats could be useful in architecture today.
- ‘quality of life’. What is best practice for housing design today and how can this be achieved in conjunction with the above two points.

While most research into regenerative design has been focussed around environmental benefits this paper is more interested in the social and cultural benefits. Effort will be concentrated into determining what are suitable density levels, what the implications of this is, and how they be achieved in harmony with the local context.

Modernism was an architectural phenomena never seen before or since, and as such the styles impact on the built environment has been huge.

This project is about determining whether any of Modernism’s design ideals hold any value in architecture today.

The primary aim of the project is to increase the density of an existing site whilst still maintaining the quality of the original development. The focus is therefore to determine the principles of an architecture which responds to the local conditions.

The three strands of research can also be seen in three distinct areas of design investigation; master plan, building design and internal apartment design. While the internal layout is important in creating a quality of housing comparable to the Star Flats the main focus will be on the master plan and building design. Ensuring the massing and form of the buildings are in relation to the existing structures and site planning is crucial to the outcome of this project.

103 Project Objectives

The objectives of this project are:

- to identify, in general terms, the successes and failings of Modernism’s urban design ideals,
- to relate these findings to Freemans Bay Park to identify the strengths and weaknesses of the scheme,
- to identify the principles of regenerative infill projects through literature and case studies, and to apply these to the a master plan design, and
- to produce an architecture that illustrates how built elements can be sensitively added to an existing network of buildings, while incorporating contemporary sustainable features.
104 Methodology

The methodology of the thesis consists of research for design, research by site analysis and research by design. This methodology uses research to provide grounding information to support the formal design process.

Research for Design

In order to determine the successes and failures of Modernism, and the principles of regenerative design, research was conducted through reading and analysing information from books, web articles, journals and conference papers.

Case studies were crucial to determining the criteria for successful infill design. An attempt to find a range of national and international literature and case studies was made. However due to the lack of exploration in New Zealand into this field, most examples are international. Most literature on regenerative design has been focussed on the environmental impacts to date. Because this project is interested in the social and cultural impacts, quantitative assessments have had to be sought from the projects and literature studied.

Research by Site Analysis

Exhaustive site analysis to develop a thorough understanding of the site was critical to ensure the design responded to its local surroundings. Site analysis is split into three categories; one, historical research of the site, its buildings and the area; two, traditional function based site analysis; and three, holistic spacial analysis.

Historical research of the site and the Star Flats was carried out through reading literature, and visiting the Housing New Zealand archives. The traditional research involved further research through literature but focussed more on statistical information and spending time on the site, in Freemans Bay, and surrounding suburbs. Form-based analysis was used to determine attributes and patterns within the site that might help determine the designers original intentions. This involved spending time on the site and working with the original site drawings.

These three strands of site analysis allowed the programme requirements of the redevelopment to be formulated, but more importantly the spacial analysis provided information that shaped the master plan response.

Research by Design

Research carried out by design is the most important aspect of this project as it allows a testing of the ideas formulated in the previously described research, as well as opening new directions for research. The final design solution will show whether the principles determined through literature and case study review will formulate a building that responds to the local. As outlined previously the design can be split into three categories; the master plan, building design and apartment design.

The design of the master plan to determine the mass and locations is the most crucial part of the design process in ensuring the new does not detract from the old. The use of sketches, physical models and photomontages has allowed the design to be judged both intuitively but also against the criteria set out in the above research.

Building design is a continuation of the master plan, working with closer detail and proportion to ensure a advantageous dialogue between old and new. The individual apartment design is mostly concerned with providing functional and comfortable living spaces for occupants.
2. Background Review

“Hope in the future is rooted in the memory of the past, for without memory there is no history and no knowledge. [...] In a clear understanding of the past lies the hope of our future.” - Buckminster Fuller

201 Modernism

The Modern movement emerged at the turn of the 20th century as a direct reaction to the social, economic and cultural circumstances of its age. Modernism went on to become the dominant style of the 20th century producing many great buildings and the three great architects of the last century; Frank Lloyd Wright, Le Corbusier, and, Mies van de Rohe. There were many factors that led to the emergence of the new style, and one which relates specifically to urban design was a genuine concern for the situation of the nineteenth century industrial cities.

The exponential rise of industry and subsequent influx of people to major urban centres caused huge overpopulation resulting in disease and vice becoming rampant within the confines of these cities. Many Modernists directly related these social conditions to the physical conditions of the places, they considered that architecture was the way of addressing these issues.

Modernism’s urban strategies polarized people at the time of introduction, and have continued to be criticised, especially by the public, and especially in relation to urban design.

Le Corbusier’s Radiant City

Le Corbusier’s book The City of Tomorrow and its Planning was influential in the inception of Modernist ideals of urban design. In the text Corbusier set out his ideal city plan, which most Modernist’s strictly adhered too. The plan merges two ideas, that of the English Garden Suburb, and the new building typology, the skyscraper, creating one of the most lasting ideas of Modernism, the pavilion in the park. It is from this idea of housing set amongst generous park-like grounds that the Star Flats emerge.


Fig. 2.1. An image of London in 1891. One of the industrial cities that Modernism sought to free.
Fig. 2.2. The centre of Le Corbusier’s Radiant City.

Showing the heliport, super highways and skyscrapers.
Le Corbusier developed his ideal city plan many times between the early 1920s and the 1940s, culminating in Ville Radiusée or The Radiant City in 1938. The plan uses many of the same strategies as in his previous city concepts including, clearance of the historic city scape, elimination of streets, use of modern technology to construct, zoning of activities and priority to the automobile.

In response to his hatred of streets Le Corbusier omits them totally from his plan by creating a series of super highways to deal with the majority of traffic and setting the buildings back from the smaller service roads in green space. The roadways dedicated to vehicles were raised five meters above the earth to give back the ground plane to the pedestrian, with pathways running in orthogonal and diagonal projections. His idea of the plan as the generator manifested itself in the zoning of activities. Bruno Zevi says in his book ‘The Modern Language of Architecture’ that the first step one should take in designing a city is to compose a list of the activities to take place there. This is exactly what Le Corbusier did; he proposed that areas of a city should be divided by activity and that they should be clearly distinguishable as so, by the style and scale of the buildings in it.

Discussion

Ville Radiusée or the Radiant City was an attempt to create a sanitized city, free from the dirt, disease and vice of the nineteenth century industrial city. Le Corbusier said “the happy towns are those that have an architecture”, he believed that his massive monumental buildings in space were what people felt comfortable with, not the old unplanned conglomeration city. Ultimately though the very problems of congestion, pollution, crime and disease that he was trying to solve are just as present, and in some cases worse, in the cities he created as the ones he detested.

While it is generally accepted that Modernism created many beautiful buildings it is also acknowledged that the Modern movements approach to urban design was not a success. There

5 Le Corbusier, The Radiant City, 124.
has been much criticism of modernism and its ideology specifically in relation to urban strategies, and particularly with those of Le Corbusier.

Lack of community as discussed previously is the main concern for many opponents of Modernist ideologies, who cite cities which are at the scale of the vehicle instead of the occupier,\(^\text{10}\) the exclusion of streets and zoning of activities\(^\text{11}\) as the primary factors of this. Numerous critics see the modern city as a dead place, Brolin tells of a tour guide at the Osaka World Fair mistakenly describing the Modernist exhibition ‘city of tomorrow’ as the ‘city of sorrow’\(^\text{12}\).

Peter Blake describes Le Corbusier’s strategy for Paris as such “[he] proposed to wipe out much of the centre of that city in one fell swoop and replace it with a grotesquely monumental graveyard of vast monoliths, strung together by superhighways”,\(^\text{13}\) indicating Le Corbusier’s view of modernism as a whole solution.

Despite all of this though many of Modernism’s aims were noble, Richard Rogers attests to this saying that “the modernist goal of creating a democratic, affordable architecture to replace the existing slums was commendable”.\(^\text{14}\) The author also praises the ideas of sculptural architecture, experimentation with technologies, and integrity of building materials as aspects of Modernism that continue to “animate the best of contemporary architecture”.\(^\text{15}\) Rogers also suggests that “in the struggle to create the movement” the period for revision and adaption was missed.\(^\text{16}\) He also agrees that many Modern cities are bland lifeless places but suggests capitalism has to take some of the blame for this.\(^\text{17}\)

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\(^{10}\) Scully, *Architecture of Community*, 222.
\(^{11}\) Blake, *Form Follows Fiasco*, 88.
\(^{13}\) Blake, *Form Follows Fiasco*, 93.
\(^{14}\) Rogers, *Architecture*, 12.
\(^{15}\) Ibid., 16.
\(^{16}\) Ibid.
\(^{17}\) Ibid., 9.

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**Conclusion**

The following is an outline of those points of Modernism that were unsuccessful and need to be avoided during the design development of Freemans Bay Park, and those aspects that have been successful and need retaining and enhancing.

**Failures of Modernism**

- Zoning of Activities
- Buildings in Space
- Lack of Community
- Reliance on the automobile

**Successes of Modernism**

- Improved environmental conditions (sunlight, fresh air and hygiene)
- Sculptural architecture over decoration.
- Experimental use of technologies
- Emphasis on green space
- Economy, rationality and efficiency
Fig. 2.3. Architects original concept sketch
202 Star Flats

The following body of research is a summary of a report written on the history of the Star Flats in New Zealand State housing, for a full copy of this report see Appendix A.

There has been much written on the topic of State Housing in New Zealand, but most of it has focussed on the dominant suburban scheme of the 1930s. A limited amount of discussion is recorded on the progression of the flat typology in New Zealand State Housing, and there exists even less on the Star Flats in particular.

The following section will include a brief history of the Star Flats as a state housing typology, and then a discussion of the schemes strengths and weaknesses with regards to the above outlined successes and failings of Modernism. Some of the following information has been drawn from sources directly related to the Star Flats, and some from text related to flats in New Zealand. Because of the lack of published information on the flats much of the following text is a formulation of my own observations.
Fig. 2.4. Hayes Paddock, Hamilton. An image typical of the 1930s suburban scheme.
In New Zealand the word ‘flat’ had strong associations to the tenement blocks of Europe and America. Cedric Firth wrote in 1949 “In a country such as New Zealand... any excursion into the erection of apartment blocks demands an excuse, even an apology”, 23 indicating just how unpopular the typology was. During the late 1940s pressures on housing become such that higher density living became necessary to explore. Because of the bad public image very few apartment blocks were built, accounting for only 1.5%, of all state rental units. 24

Many architects in the Housing Construction Department of the government were ‘interested in a series of ideas about urban form and city living that originated in the modernist movement’. 25 In the late 1950s impetus for flat design began to pick up, and from 1957 a number of medium-density schemes were trialed, including the Star Blocks. Many of these apartment blocks saw “a direct engagement with modernist ideals”, 26 most likely a reference to the influence of émigré European architect’s, such as Ernst Plischke and Frederick Newman.

Star Flats
One of the major aims of the Star Flats was to increase density close to city fringes to reduce suburban sprawl. While the density of every Star Flat scheme differs, the government of the time promoted the density of the schemes based on an average figure, 89 people per acre. 27 When compared with the 36 people per acre achieved by the suburban scheme of the 1930s, this was a vast improvement. 28 However many of the Star Flats in Auckland were located in suburbs far from the city fringe such as, Orakei, Penrose, Blockhouse Bay, Tamaki and even Northcote. Even by today’s standards these suburbs are remote from the city; in the 1960’s these locations may have seemed a strange choice to limit suburban sprawl.

23 Cedric Firth, State Housing in New Zealand. (Wellington: Ministry of Works, 1949), 33.
25 Ferguson, Building the New Zealand Dream, 140.
26 Gatley, “Going up Rather Out,” in At Home in New Zealand, 141.
27 Ferguson, Building the New Zealand Dream, 192.
Gael Ferguson reports that “the Corporation found it difficult to let them. Some Corporation officers recommended that the Division confine them to inner-city sites, but the government’s reaction was that applicants were being ‘too choosy’’. However Cedric Firth, in 1949, discusses the benefits of multi-unit dwellings, suggesting that “the advantages offered by a centrally situated multi-unit development - easy distance from the centre of town and from places of employment, reduced transport time and cost - may well outweigh the restrictions that this form of dwelling provides”.

This statement would suggest that the government recognised that this type of living was best suited to central urban environments, yet many of the schemes were built in suburban zones.

It is difficult to say how much of the ill feeling towards the flats from tenants was due to social conditions and how much was a direct criticism of the architecture. From anecdotal evidence Ben Schrader concludes that some of the negativity towards the flats was brought about by the public perception of these kind of living situations. During the 1950s, 60s and even 70s the nuclear family situation was the dominant social form, and being outside of this group one would have experienced many of the prejudices associated with being a minority.

Assessment

The core value of these flats is that they provide a rare example of a good Modernist multi-unit housing scheme. Socially the flats are representative of the Government’s efforts to provide housing for the workers of New Zealand. Their attempt to provide communal living areas such as laundry and external garden spaces was brave in the face of preferred separate living. What the flats also illustrate, is a greater ambition on the part of the government and the architects involved, to re-shape the cities and towns of New Zealand to become truly more ‘urban’.

The following assessment will be carried out against the above determined successes and failings of Modernism:

- Zoning of Activities (causing blandness). The Freemans Bay site is not a bland environment to be in. The value of the extensive landscape design and inclusion of terraced and row housing, means that there are many smaller spaces, and winding pathways through the site, constantly revealing

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30 Firth, *State Housing in New Zealand*, 34.
Fig. 2.5. The Star Flats in Glenn Innes (pre-renovation) had very little vegetation, appearing bland and uninviting. Compare this to the lush planting of Freemans Bay Park.
new vistas. In other Star Flat developments such as Penrose and Northcote, there is no planting or alternative residential typologies and the sites suffer for this.

However where the residential zoning of this site is detrimental, is the lack of human activity for large parts of the day. During working hours, of 9am to 5pm, very few people occupy the site. This lack of intensity is increased by the fact that apartments are all the same two bedroom arrangement and therefore draw in the same type of residents, young married couples with no children who tend to have similar schedules.

- Buildings in Green Space. The landscape made possible by leaving space around the buildings is what makes the scheme unique and valuable in Auckland property market.

- Lack of Community. Based on anecdotal evidence from speaking with the Body Corporate manager for the site, Stephen Connelly,31 and several residents there appears to be a strong community in Freemans Bay Park. However something that was indicated as missing from the Park was communal spaces such as vegetable plots and structured barbecue spaces.

- Reliance on the Automobile. This is no more of a problem for this scheme than anywhere else in Auckland. There is potential to further reduce reliance on cars due to the scheme’s location on a major public transport route, and within walking distance of the CBD, Ponsonby and local shops.

- Improved Environmental Conditions. The buildings and landscape have definitely achieved this. The excellent interior arrangement of the Star Flat blocks and large ratio of glazing provide light filled rooms all day. The operable glass means that natural ventilation is well achieved.

- Sculptural architecture. The buildings are strongly reminiscent of Modernism’s sculptural design qualities. Frederick Newman, an Austrian immigrant architect, oversaw the design of the scheme and the European influence is clearly visible in the cubic forms, curtain walling, mono-pitch roofs, wide eaves and sun screens.

- Experimental use of technologies. The construction of the flats was innovative at the time. Concrete was a reasonably new material, and had fairly limited testing in New Zealand. Some prefabrication was used for the external sliding doors. The construction of the flats was of a very
Fig. 2.6. Plans, sections, and elevations of a typical Star Flat block.
high standard which can be seen in the condition of many of the flats today.

- Efficiency and Standardisation. This is perhaps the best realised aim of Modern design in the Star Flats. The central circulation core is extremely efficient and lit naturally for large parts of the day.

**Conclusion**

It is the quality of the design and construction of these buildings that makes them valuable in terms of the architectural progression of New Zealand.

The landscape value of many of the Star Flat schemes, and particularly of the Freemans Bay development, is considerable. The idea of the pavilion in the park that drove the design of the Star Flats means that the open spaces were equally as thought through as the buildings. At Freemans Bay prominent Modernist landscape architect Harry Turbott was employed to design the gardens. The large established trees and plants at Freemans Bay add much value to the properties both economically and aesthetically.

The internal arrangement of the apartments was exceptional, the provision of truly modern spaces, that were light, simple to maintain and intricately detailed, was something not seen in many Modern housing schemes overseas.

While rarity alone is not reason enough for preservation, the Star Flats are one of a very small number of Modernist housing in the country. For what was an extremely influential style overseas the impact of Modernism in New Zealand housing was limited. The Star Flats show that had there been more demand for this type of housing, New Zealand architects were capable of delivering high quality designs.
Fig. 2.7. Talbott Park Master Plan produced by Boffa Miskell. Talbott Park sought to regenerate a low socioeconomic area by improving housing and environmental standards.
Redevelopment

Redevelopment, infill, regeneration, restoration and adaptive re-use are all terms used to describe a broad architectural position that values the existing built environment. Neither of these terms describe exactly the aims and intentions of the design of this project. This chapter will look further into three prominent architectural ideas in the urban redevelopment field. The aim of this being to uncover common strands running through all three to determine a set of criteria for this design project.

The three theories are regenerative or restorative design, adaptive re-use, and urban infill.

Urban Regeneration

Regenerative and restorative design are slightly different theories. They both acknowledge human interaction has damaged the environment but while restorative design “seeks to return polluted, degraded or damaged sites back to a state of acceptable health through human intervention”, it is restoration in this context that is most relevant to this project, seeking to repair a damaged site. However repairing the Freemans Bay site to a ‘green landscape’ will inevitably have ecological effects so both are true.

Chris Couch relates the repair of injured tissue or bone to its original state to urban regeneration. He describes a method of regrowth in cities that revitalises economic and social function and restores the ecological or environmental quality to an area.

In New Zealand regeneration is often called revitalisation and is a strategy supported by the Auckland Regional Growth Strategy. This document promoted urban intensification over greenfield development and focus on updating the physical environment.

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33 Ibid.


Fig. 2.8. Tate Modern from http://www.urbandesigncompendium.co.uk/public/images/Tate%20Modern.jpg
Adaptive Re-Use

Adaptive reuse is a term which describes “a process that adapts buildings for new uses while retaining their historic features”.[36] While adaptive re-use is not strictly related to this project it seems appropriate to reference as the redevelopment of Freemans Bay can be seen as a re-use of the site and its buildings.

There are three factors of adaptive reuse that are relevant to this project, environmental, social, and aesthetic.

Much of the discussion surrounding adaptive re-use now is about preserving the energy tied up in the materials and construction of existing buildings. This is true of the proposed retention of the Star Flats, it is surely better to use existing buildings than to construct new ones from an embodied energy perspective.

Socially re-using a building rather than preserving it has the potential to increase the community’s awareness of its historical importance. The benefit of regeneration over strict restoration is that the latter can lead to “a bland, historically misleading monument surrounded by a car park.”[37] Where as retrofitting a building to render it a functional part of society ‘keeps it alive’.[38]

The very notion of re-using buildings is an aesthetic decision, adaptive re-use can be a way to revitalize urban life and declining neighbourhoods through ensuring a diverse urban environment.

The most relevant aspect of adaptive reuse to this project are the strategies used to relate old and new. One of the most successful strategies appears to be making clear the distinction between old and new.

An example of this, and possibly the most famous example of adaptive reuse, is the Tate Modern in London which is housed in the old Bankside Power Station. The new addition is notably modern and different from the existing, clearly denoting the buildings story of being added to over time.

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Fig. 2.9. Eblana Avenue infill project, view from the street.
**Infill**

Because Infill is not a theory, but an industry term, there exists little critical writing on the topic. Two texts that I have found useful in understanding infill design principles are Mornement and Biles, *Infill: New Houses for Urban Sites*, and *Building Better Communities*, published by the Royal Institute of the Architects of Ireland.

While the first book contains very little critical thinking it does give some insight into the recent surge in popularity Infill has been subject to. The authors suggest that to some degree it is a response to government policies, but other influences include; changing location and lifestyle preferences, shrinking household sizes, and an ageing population.\(^\text{39}\) The book also outlines a large number of infill projects, however most of these are small scale residential projects.

The second book addresses a variety of urban issues but includes a chapter, written by Eddie Conroy, on infill. The discussion of infill in this book is limited to examples located in Ireland, but does offer a more critical view of the progression of infill projects. In the chapter he outlines the growth of infill in Ireland and discusses a number of good and bad projects of varying scales. He identifies the vices of what he calls “an ex-urban boom”\(^\text{40}\) as congestion and pollution, social isolation, and community fragmentation, and suggests that these problems are what infill has the potential to remedy.

From analysing three precedents in this area (see Appendix B) it has become clear that an understanding of the local context is critical. The scale and detailing of the buildings to relate to the pattern of the area is one way to ensure the new building ‘fits’ with its place. Being aware of movement through the site and facilitating it is an important way of ensuring occupants of the area are not alienated from the site.

Talbot Park (Appendix B) illustrates how, when new buildings or alterations to existing buildings are not relative and respectful of the existing, the harm is both social and architectural.

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\(^{39}\) Mornement and Biles, *INFILL*, 6.

\(^{40}\) Conroy, “Urban Infill,” in *Building Better Communities*, 124.
Good Practice

The strongest commonality between the three theories of urban redevelopment is a belief that revitalising an existing area can have social, cultural, economic and environmental benefits. From the previous research there are seven principles I have determined that good redevelopment projects should endeavour to achieve. These are;

- buildings should be well integrated into the surrounding area to respect the existing buildings and to provide connections to pedestrian, cycling and public transport networks,

- developments should provide upgraded or improved supporting infrastructure, in line with the new demand for sustainability and resilience,

- developments should revitalise the existing area by creating new streets and/or public areas,

- developments should repair damage to the local ecosystem where possible,

- new buildings should not mimic their surroundings,

- projects should provide a range of housing options for all members of the community to create both diverse buildings, but also diverse social interaction, and,

- developments should focus on the local as well as the wider community.
301 Site Analysis

Fast Facts

Location: Freemans Bay, Auckland, New Zealand.

Existing Buildings: There are 120 apartments in nine Star Blocks and a further 81 apartments in terrace and row housing.

Owner: The site is owned by Auckland City Council but is managed by Stephen Connelly of Connelly Management Limited. 128 apartments are in private ownership, 51 are owned and let by the Housing New Zealand Corporation, and 14 are owned by a ‘rent to buy’ organisation.¹

Architect: Frederick Newman in Housing Division of the Ministry of Works.²

Landscape Architect: Harry Turbott

Master plan: The site plan was designed by the Auckland City Council, it is unknown specifically which individual.

Local Demographics

Freemans Bay is a city fringe suburb of Auckland city, at the last census in 2006 there were 3708 people living in 1677 dwellings in the Freemans Bay area. All of the following information has been taking from the 2006 census.³

Household Makeup

<table>
<thead>
<tr>
<th></th>
<th>Freemans Bay</th>
<th>Auckland Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>One family</td>
<td>51.5%</td>
<td>70.3%</td>
</tr>
<tr>
<td>One Person</td>
<td>32.1%</td>
<td>19.6%</td>
</tr>
<tr>
<td>Av.house size</td>
<td>2.2 people</td>
<td>2.9 people</td>
</tr>
</tbody>
</table>

Age

<table>
<thead>
<tr>
<th></th>
<th>Freemans Bay</th>
<th>Auckland Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 and over</td>
<td>7.8%</td>
<td>9.9%</td>
</tr>
<tr>
<td>15 - 64</td>
<td>82.1%</td>
<td>68%</td>
</tr>
<tr>
<td>15 and under</td>
<td>10.1%</td>
<td>22.1%</td>
</tr>
</tbody>
</table>

The statistics above show that currently there are a low number of families with children living in the Freemans Bay area. Based on the number of schools in the area I believe this is due more to the fact that there are few suitable properties

¹ Stephen Connelly, Personal Communication 27.05.2010
² This is assumed from his signature on the original drawings obtained from Housing NZ Archives (see Appendix D)
Fig. 3.2. Image of the original Turbott plan as identified by the Bradbury McKegg report.
for families in this area, not because families don’t want to be in the area.

Work/Income

2006 census figures show the largest group of workers in Freemans Bay are professional at 45%, while the smallest group were drivers or machinery operators at 2%.

The average income for the Auckland region was $26,800 while the average income in Freemans Bay was $41,000.

Both the above statistics highlight the fact the Freemans Bay is an affluent area made up of educated individuals.

Landscape

In 2007 Bradbury McKegg Landscape Architects and John P. Adam Endangered Landscapes were asked by the Freemans Bay Body Corporate to put together an evaluation of the landscape design of Freemans Bay Park. The following is a list they defined as “the main qualities of the Freemans Bay Park landscape”:

- Loose groups of canopy trees of similar species are planted in informal groups on grassed areas. The tree species are determined by their colour, the seasonal colour of the liquidambars, ash and oaks in autumn and the flowers of the cherries, paulownias, and jacaranda.

- Groups of ground cover/small shrubs, acanthus, agapanthus and cotoneaster are planted in sinuous organic shaped beds around the car parking areas and the courtyard housing blocks.

- Banks of mainly cherries, under planted with agapanthus and other ground covers, are planted between the maisonettes and adjacent car parking.

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Fig. 3.4. Walking routes and local amenities.

- - - - = walking route
1 = 500m to Ponsonby Road
2 = 500m to supermarket
3 = 1.2 km to central Queen St
4 = 100m to local shops
● = bus stop
Movement and Transport

Figure 3.4 shows destinations around the site where pedestrians and vehicles are likely to be travelling. The walking distances are also shown to indicate the proximity of local destinations.

This proximity coupled with the provision of two bus stops on the site boundaries mean that reliance on private motor vehicles should be reduced. The following is a statistic taken from the 2006 census, relating to residents access to a car:

<table>
<thead>
<tr>
<th></th>
<th>Freemans Bay</th>
<th>Auckland Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Car</td>
<td>17%</td>
<td>8%</td>
</tr>
<tr>
<td>One Car</td>
<td>44%</td>
<td>36%</td>
</tr>
<tr>
<td>Two Cars</td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td>3+ Cars</td>
<td>10%</td>
<td>18%</td>
</tr>
</tbody>
</table>

In the Auckland region (including Freemans Bay) the most popular mode of transport was the private motor vehicle, however in Freemans Bay the second most popular was walking or jogging, while in the wider Auckland Region the second was driving a company vehicle.

Local Amenities

The image opposite shows the location of the closest local shops and big supermarket. The local shops include a medical centre, small supermarket, post office, laundrette, cafes and other food outlets. The shops are approximately a 100 metre walk on flat terrain from the western site boundary.

A large New World supermarket is open 24 hours and is approximately 500 metres away. The gradient is fairly flat.

Also within a 1 kilometre radius is Victoria Park, Queen Street in the CBD, and Ponsonby Road. The Freemans Bay Community Centre is located opposite the site on Hepburn St, this facility includes an auditorium and function space as well as kitchen facilities.

The proximity of these facilities has a flow on effect to the provision of car parking on the site. It is reasonable to suggest that some residents on the site have no need for a car for a large enough portion of the week that car spaces are unnecessary for these residents.
Fig. 3.5. Evaluation of existing buildings.
Existing Buildings

In 1955 the Phillips Block Plan (fig 3.6) was published by the New Zealand Herald. The plan was dominated by a large residential tower, and a series of row housing. It appears that the funds for this proposal were unavailable and so the government stepped in offering the plans for a newly developed point block, the Star Flat.5

In 1959 the current plan was proposed, it includes nine Star Blocks and a series of terrace and row housing which appears to be a hangover from the previous plan. Anecdotal evidence has suggested the row housing was kept as a way to promote social diversity over the site.6

Whatever the reason, the row and terrace housing is clearly different in both its physical appearance but also in its intention to the Star Blocks and therefore its retention needs to be evaluated.

Figure 3.5 shows the three main types of buildings and the following is an analysis of each:

Building One - This small structure creates a barrier to entrance and exit from the site on its busiest corner. The architecture has no particular value and the footprint of the building is disproportionate to the number of dwellings it adds to the site.

Building Two - The main problem with this building and its neighbour is its location in the centre of the site. This means large expanses of concrete driveways are required to access it. As with the Building One it has little architectural value and provides few added dwellings.

Building Three - While this building ‘fits’ most with the strong North-South orientation of the Star Flats, and houses a fairly large number of apartments, the external corridor access is widely acknowledged as an undesirable typology. The building also provides a large visual barrier to the site.

As a whole the extra buildings make vehicle and pedestrian movement through the site very difficult. The large proportion of covered concrete area to building footprint can be seen as a direct attribute of these buildings.

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6 McKegg and Adam, Freemans Bay Park (accessed October 10, 2009).
Fig. 3.7. Diagram of impermeable footprint on the site.
Footprint and Car-Parking

A hugely important factor of the ability to ‘preserve quality of life AND heritage values’ is the success of the landscape. What makes Freemans Bay Park so unique in Auckland housing market is the wide open spaces and established plant life of the park. One aim I have for this project is to maintain or better the ratio of building/impermeable surface to permeable surface as compared to the existing. I believe this is possible because much of the site is covered in inefficient concreted roadways and car parking, this can be removed by inputting a logical circulation system and a number of underground carparks.

Density

The following are calculations of the current density, and the density of the Star Blocks alone.

Current Density
120 (Star Flat apartments)
81 (other dwellings)
= 201 total dwellings
201 / 3.45 hectares
= 57 dwellings per hectare

Star Flats Density
120 Star Flat apartments
120 / 3.45 hectares
= 35 dwellings per hectare

Fig. 3.8. Same image as Fig. 3.2. but looking at the amount of concrete covering the site.
302 Programme Outline

The proposed programme for the project was dominated by the original intention of increasing density. For this reason the majority of the programme outline discusses density aims, housing typologies and car parking. An inclusion of community facilities was considered but deemed unnecessary after surveying facilities in the immediate proximity.

Density

The density of the proposed scheme will be determined by two factors; One, the need for higher densities in city fringe suburbs; and two, a determination of appropriate mass on the site.

A major factor on determining appropriate density is looking at the larger context. If the whole of Auckland city was at a medium density (between 35 - 70 d.p.h) the need for high density (over 70 d.p.h) schemes would be eliminated. However in a city like Auckland where the average suburban density is around 15 d.p.h, high density developments located at key nodal points are necessary. I propose that this scheme would be one of these high density areas and therefore the d.p.h aim of this project is 70 d.p.h or higher.

Housing

The types of housing on the site are very important to determining whether the proposed scheme does cause harm to the ‘heritage values and quality of life’ of residents. The following quote relates to the quality of life of residents and reflects my beliefs about the importance of human activity in residential spaces.

“Architects who consider residential architecture an inferior task have lost sight of humanity, since working with residential architecture means working with human being and their needs”

The following is a set of factors that have been determined as crucial to the success of high density housing projects.

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8 Peter Ebner, Typology+: innovative residential architecture. (Basel: Birkhaluser, 2010), 7.
<table>
<thead>
<tr>
<th>% Breakdown</th>
<th>Total no. on site (3.45 hectares x 70 d.p.h)</th>
<th>Existing on site</th>
<th>No. of new</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studio</td>
<td>10% x 240 = 24</td>
<td>30</td>
<td>24</td>
</tr>
<tr>
<td>One Bed</td>
<td>30% x 240 = 72</td>
<td>90</td>
<td>30</td>
</tr>
<tr>
<td>Two Bed</td>
<td>50% x 240 = 120</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Three Bed</td>
<td>10% x 240 = 24</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>TOTALS</td>
<td></td>
<td>120</td>
<td>240</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of apartments to be added</th>
<th>Ave size of apartment</th>
<th>Area Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studio</td>
<td>24</td>
<td>40 m²</td>
</tr>
<tr>
<td>One Bed</td>
<td>42</td>
<td>55 m²</td>
</tr>
<tr>
<td>Two Bed</td>
<td>30</td>
<td>70 m²</td>
</tr>
<tr>
<td>Three Bed</td>
<td>24</td>
<td>100 m²</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig. 3.9. Housing Breakdown tables. All figures are based on achieving a minimum of 70 d.p.h.
- Density - appropriate density will ensure that the scale of the project is suitable to the infrastructure and character of the area.

- Access - efficient vehicular and pedestrian access to the site will ensure the impermeable footprint on the site is reduced as well as traffic loadings on surrounding roads.

- Internal Circulation - circulation within the buildings needs to be efficient whilst creating dynamic spaces that will facilitate social interaction.

- Efficiency - while efficiency in housing is always a priority, the site is in an affluent area where high value homes are expected so efficiency in relation to reduced cost is not as imperative.

- Social Interaction - Social interaction will be encouraged in the architecture of this scheme.

- Privacy - Maintaining privacy for residents becomes more difficult as density increases, but is crucial to the success of the scheme.

- Visual Interest - The buildings and landscapes need to be dynamic and engaging.

Housing Typologies

The following is a breakdown of the apartment sizes required on the site. This has been determined by an analysis of census information regarding typical family sizes/types in Freemans Bay and greater Auckland.

The statistics show that currently there are a low number of families with children living in the Freemans Bay area. Based on the number of schools in the area I believe this is due more to the fact that there are few suitable properties for families in the area, not because families don’t want to be in the area. There is a slight emphasis on family friendly apartments and facilities in the breakdown of apartments (fig. 3.9). The majority of residents will still be single people or couples with no children and this will also be reflected in the following breakdown of apartment sizes/types.
Car Parking

Car Parking on site is currently in above ground concrete pads close to each block of apartments. As discussed previously this is inefficient and will be even less suitable with an increase in density. The ratio of car spaces to apartments is currently 1:1, and Auckland City Council requires two spaces for every residential unit.

However the aim of this project is to reduce resident’s need for an automobile by providing housing in an area close to many amenities and on public transport routes. Therefore there will be a ratio of 1 car space : 1 apartment. However only 75% of these will be accessible to residents, the other 25 % will be for visitor or short term parking. There will also be an emphasis on bike storage to encourage other modes of transport.

The majority of car parking will be located in a series of centrally located underground parking buildings. The visitor car parks and some of the residents car parks will be located in above ground car parks. There are two reasons for this; one, to provide as much green space as possible further reinforcing the original concept of the master plan; and two, to reduce the visual impact of cars parked above ground.
4. Design Process

401 Concept

‘Contemporary interpretation’ describes the concept of this scheme as a redevelopment of an existing site to render it sustainable in today’s urban environment. This will produce a scheme that celebrates the many successful aspects of the Star Flats by interpreting them in a contemporary way to inform the new building design. Thus the viability of retaining the Star Flats is further proven through demonstrating how many of the schemes ‘heritage values’ are still relevant in housing design today.

Therefore the design process is one of interpretation and adaption of Modern ideas for today’s environment. The two major elements of the design process are determining appropriate massing and locations for a building or series of buildings to contain the new housing units, and then the specific design of the buildings and housing units within.

For that reason the following discussion will be separated under three headings; Master Plan, Building Design and Apartment Design.

402 Master Plan

To begin designing the master plan a series of decisions and assumptions have to be made which are as follows.

- It is decided that because of the experimental nature of this project all council regulations in terms of height restrictions, boundary set backs will be ignored. Design will be used to judge what is appropriate for the site.

- It is assumed that all buildings on the site, except for the Star Flats, have been removed. The reason for this is that the increased density they provide is low in relation to their footprint.

- It is determined that the Star Flats will be preserved in their exact form. No modification will be made to the existing structures on the site.
Design Considerations

Design of the Master Plan will be carried out using drawings (plans, sections, and perspectives), and physical models. The following four factors are discussed further as determining the master plan.

Urban Patterning

As determined when researching Infill design through precedents, schemes appear most successful when designed to consider the scale and form of the surroundings.

Urban Patterning describes patterns or trends that may be found both within the site and the greater urban area. The reason for identifying these is that when used within the scheme, they can help to relate the new buildings to the context. This will ensure a ‘fit’ with the local context and that ‘the embodied heritage values of the scheme’ are not destroyed.

Circulation

Circulation and movement through the site is extremely important in ensuring that the development functions as efficiently as possible. As density increases so does the number of people and vehicles needing to negotiate the site. Car parking becomes a much more significant issue, especially if the aim of reducing the impermeable footprint on the site is to be achieved.

The permeability of the site in terms of public access is an important aspect of the scheme. This is in terms of increasing public awareness of the sites historical importance, creating a scheme integrated with the wider community and protecting the privacy of occupants. The importance of public access was identified through precedent study of Infill design, as summarised in the following points;

- infill developments should revitalise the existing area by creating new streets and/or public areas, and,
- infill buildings should be well integrated into the surrounding area to respect the existing buildings and to provide connections to pedestrian, cycling and public transport networks.
Fig. 4.1. Abstract Painting of the site plan

Fig. 4.2. Abstract Painting of the site plan

Fig. 4.3. Abstract Painting of the site plan
Massing

The mass and location of the new buildings is the most significant aspect of ensuring the new structures are appropriate to the site and its surrounding context.

The new structures will need to do the following:
- reinforce the existing morphology of the Star Flats on the site,
- allow efficient access on to and throughout the site,
- not detract from the quality of living within the Star Flats by blocking sunlight or views.

Landscaping

The location of new buildings need to avoid major groves of trees on the site so as much plant life as possible can be retained.

A key design issue will be how to enhance the landscape of the site. The extent to which green space is left undefined, as it is now, or whether more structured communal spaces are provided will have to be explored through design.

Design Explorations

The process of designing the master plan began through an exercise of interpreting the pattern of both the layout of the specific site and the wider urban grid.

1. Abstract Paintings

A series of abstract paintings were used to ‘find’ patterns within the site and layout of the Star Flats, as shown on opposite page. These drawings allowed a determination of what the original designer’s intentions or guidelines could have been and therefore where new buildings could be located in plan. They show that while the layout of the Star Flats at first appears random there is a logic behind the building locations. All the Star Flats, except one, are located around the fringe of the site. And as fig 4.3 shows there are two strong lines of Star Flats along the axis of Beresford Street.

A strong boundary condition exists between street and site created by the building set backs and planting (fig 4.4). It is determined that this boundary is an urban feature unique to this scheme and should not be interrupted by new buildings being placed on the street frontage.
Fig. 4.5. A 1:2500 model from Queen Street to Ponsonby Road shows how the urban grid responds heavily to the topography of the area.

Fig. 4.6. Three defining aspects of the site; the Star Flats and their strong north-south orientation, the contours and the existing planting.
2. Large Context Model

The urban patterning of the surrounding area is much more subtle than that of the specific site. As the image opposite shows, the roads re-act strongly to the landform. For this reason there is no repetitive geometry to the street grid. The only discernible pattern related to the site is the series of streets running east west at equal distances along Hepburn Street, culminating in Wellington Street.

Western Park however is a major urban element that strongly effects the site. The park “one of the city’s most notable open spaces covering approximately 8 hectares”¹ is one of the larger green spaces in Auckland and is well used throughout the day by walkers and runners. Currently the walkway through Western Park stops on the southern boundary of Freemans Bay Park. There is an opportunity here to link the two parks, Western and Freemans Bay, to encourage public interaction with the Star Flats. This will help to further cement the Star Flats presence in the area.

As shown by fig 4.8 there is a simple equation for the way mass is consolidated in a form. A building can be low, covering a larger ground area, or a tall covering less of the ground plane.

As shown by fig 4.8 there is a simple equation for the way mass is consolidated in a form. A building can be low, covering a larger ground area, or a tall covering less of the ground plane.

Fig. 4.7. Diagram showing connection between Western Park and Freemans Bay Park and how pathways could be continued through.

Fig. 4.8. Density massing options diagram FAR 2 shows how the effect is increased when twice the density is achieved.

As shown by fig 4.8 there is a simple equation for the way mass is consolidated in a form. A building can be low, covering a larger ground area, or a tall covering less of the ground plane.

As shown by fig 4.8 there is a simple equation for the way mass is consolidated in a form. A building can be low, covering a larger ground area, or a tall covering less of the ground plane.

Fig. 4.9. Scheme A - Photograph of the model.

Fig. 4.10. Scheme A - Plan (not to scale).
3. Scheme A - low buildings

Four low buildings combine in this design to provide enough units to increase the density to 80 d.p.h.

While three of these buildings work with the strong North-South axis of the Star Flats the fourth does not. In an attempt to relate to the street, this building feels out of place with the rest of the scheme. The architectural values of the site are harmed by the way this new structure competes with the organisational elements of the site.

Further to this there is a body of research that suggests people feel most able to orientate themselves in urban spaces arranged at right angles.

The long buildings provide good opportunities for car parking directly in front of each unit, and negate the need for vehicular access to the centre of the site. However pedestrian movement into the site is hindered by the large physical and visual barriers created by these buildings.

Something that this scheme clearly outlines is how intrusive a large footprint is on the existing buildings and site planning. The purity of the Modern concept of buildings dotted throughout the landscape is destroyed by this type of master plan. Not only would these large footprints require the mass removal of trees, they also destroy the original intention of the landscape plan. However what this scheme does very well is to enclose external space creating large courtyards that could be designed to include facilities for the occupants of the site.
Fig. 4.12. Scheme B - Perspective sketch reminiscent of modern images / ideals.

Fig. 4.13. Scheme B - Plan (not to scale).

Fig. 4.14. Scheme B - Photomontage.
4. Scheme B - tall buildings

This scheme comprises four eight storey towers of a similar footprint to the Star Flats that respond to the patterns found in exercise one.

The response of the building locations to these patterns helps the buildings feel part of the original master plan. While it is important for the buildings to respond to the context, it is also important that the buildings do not mimic the Star Flats. For this reason these towers will have to be detailed in such a way as to illustrate the difference between ‘old and new’.

While this scheme allows free movement throughout the site, it creates a problem of access to the internal buildings. One possible solution to this is to re-instate the existing Waiatarau Place, linking it to the eastern site boundary to create an internal road.

Parking outside each individual unit is not possible with tall buildings, the alternative is underground parking. Careful planning would be needed to ensure the social interaction facilitated by the to walk from car to apartment, which currently occurs on the site, is protected.

Scheme B further reinforces that a large footprint is more detrimental to the site than a tall building. This is particularly clear in fig 4.14 where the full height of the buildings is rarely seen due to the extensive large trees. There are a number of buildings of a greater height than those proposed that are visible from the site (fig 4.16), which further justifies height in the area.

The scheme will require very few trees to be removed to make way for the buildings, however the towers don’t enclose external space to create courtyards as scheme A does. This will mean private external space such as balconies will become more important.

Conclusions:

- Scheme B feels the most appropriate response to the site and most answers the research question of ‘how to increase density without destroying the heritage values or quality of life occupants currently enjoy’.

- Efficiency of design and construction would be good as each of the towers would only have minor differences.

- The issues that need to be resolved in order for this scheme to be truly successful are; circulation and car parking; the building form and detailing; and the integration of Western Park and planting into the scheme.

Fig. 4.15. Scheme B - Photograph of the model.

Fig. 4.16. High rise buildings seen from site.
1. Central Circulation
2. Dual Aspect Apartments
3. Modern Planning

Fig. 4.17. Typical Floor Plan of a Star Flat

Fig. 4.18. Contemporary interpretation of the Star Flat plan

1. Central Atrium
2. Dual Aspect Apartments
3. Contemporary Living Spaces
**403 Building Design**

The design of the individual apartment towers is a process of interpreting the original Star Flat design, the aims and intentions of Modern housing design, and contemporary standards for good practice in housing design. As outlined previously, the concept of the scheme is a contemporary interpretation of the Star Flats to further reinforce the viability of their retention.

Image 4.17 is a simplified plan of the Star Flats showing the three main design features. These are central and efficient circulation, dual aspect apartments and modern planning of the living spaces.

In order to form a contemporary interpretation, the features of contemporary housing must be defined. Appendix C is a series of precedent studies of recent housing projects from which the following points have been concluded:

- Density
- Social Interaction
- Environment
- Sustainability
- Technology

Fig 4.18 shows how these points will be included within the towers to achieve a ‘contemporary interpretation’. The central circulation will be interpreted as a large atrium space which provides vertical circulation through the building, encouraging social interaction between residents and acting as an environmental control. Dual aspect apartments will be maintained. Internal planning of the apartments will be contemporary, providing socially engaging spaces and passive environmental controls.

The building design will be determined through mainly physical models, with plans and sections to further explain.
Fig. 4.19. Environmental Diagram

Area for rain water collection and service plant

North facing roof for solar hot water and photovoltaics

Heat Exhaustion

Indirect sunlight to back of apartments

Atrium on Southern facade acts as a thermal barrier

Operable louvres to protect from high summer sun

Thermal mass

Ventilation
Design Considerations

There are three factors that will be resolved to ensure a successful design outcome. These are; aesthetics, social conditions, and environmental aspects, further defined as:

Aesthetics

The aim of this project, to avoid ‘destroying the heritage values’ of the Star Flats and Freemans Bay Park, is the main aesthetic consideration of this design.

Social Conditions

The interactions of the buildings occupants are split into two categories, those between residents moving through public space, the atrium, and, those within private space, the apartments.

The atrium space will encourage residents of the building to interact with each other, but also with the building itself. Many apartment buildings of the past 50 years have neglected the social value of the journey from car to apartment. In many instances it is possible to move from your car, into the lift, and to your apartment without seeing another person or engaging with your vertical displacement.

Environmental Factors

The main point of difference between new and old will be the consideration of environmental factors to reduce energy consumption. The design of the buildings will ensure that passive heating and cooling to reduce reliance on mechanical systems are integrated where possible. Rain water collection, solar hot water, super insulation, energy efficient fittings, and energy collection through photovoltaics will be included. In other respects this project engages with the principles of sustainable development by the proposal to retain and retrofit existing buildings and their basic infrastructure. These strategies recognise the importance of socially sustainable development by supporting the retention of the existing community on this site.

Structure

Modernism’s use of experimental technologies is explored through the use of timber. The use of timber in medium/high rise construction is being explored by many architects, including Waugh Thistleton Architects who hold the record for building the tallest residential timber structure, as a sustainable product.

Design Explorations

1. A series of 1:500 models

A series of models was produced as a formal exercise of abstracting and modifying the original Star Flat block.

The first model is a simplification of the existing Star Flat Block.

The second is an extruded Star Flat block to a height of 24 metres (8 levels @ 3 metre floor to floor). The horizontal lines reference the height of the Star Flats but cause the building to appear squat.

The third model breaks down the formal elements of the Star Blocks, the cruciform shape in plan. The atrium becomes readable on the external elevation through the use of vertical elements which begin to alleviate the squat proportions of the block.

The fourth model reduces the form of the building to three massive shear walls. These act as a dividing element, forming the central atrium, and will act structurally and environmentally as thermal mass. The shear walls show how in plan the Modern idea of the pinwheel can be abstracted to form the atrium and apartment division. Formally this moves away from traditional symmetrical plans towards a recognisable asymmetric form used widely in Modern building plans. 3

The fifth model increases the floor to floor height to four metres. This proportion is far more elegant referencing the well known Modern typology, the skyscraper. The shear walls remain and further elements of the apartments and roof form are introduced. The butterfly roof references that of the Star Flats. The atrium roof rises to the south creating a northern slope for photovoltaics and solar hot water panels.

The sixth model retains the same mass and formal qualities of the previous model but the eastern and western facades are broken down to reference the Star Flat blocks.

The eighth and final model uses the idea of the pinwheel in the shear walls and reintroduce the elements of apartments and roof to complete the final form.

Fig. 4.28. 1:200 model

Fig. 4.29. Building Plan (NTS)
2. 1:200 models and plans

With the primary form determined further detail is required. The four elements of the building as I see them are: 1, the basic mass; 2, the facade/materiality; 3, planning; and 4, the roof form.

Figure 4.28 shows a model of the building at 1:200. The facade has a vertical patterning to enhance the height of the building which will be developed further in the next exercise.

Figure 4.29 describe the way the shear walls divide the plan into four sections, the central atrium, and three apartments. Because the requirement is for four apartments on each level one of the three units will have to be divided again.

As illustrated by fig 4.30 the roof form of the towers reference that of the Star Flat. The butterfly roofs of the Star Flats are one of their most recognisable features and so the roof of the new buildings is important. The difficulty is that the roof is 32 metres above ground, it is for this reason that the angles of the slopes are more pronounced, to ensure they are still readable form ground level.

3. Atrium plan

The atrium consists of a single lift and stair, with bridges connecting the residents to their apartments. The stair is located on an external wall so that at the mid point of each flight you are able to see the landscape, further enhancing the idea of being aware of one’s vertical shift.
Fig. 4.32. Final Eastern Elevation (NTS), showing operable second skin. Breakdown of the Star Flat Geometry shows the relationship between old and new.
4. Elevations and Sections

The following sections and elevations were used to determine the detailing of the facades, which have a big impact on both the aesthetics of the building and the environmental controls.

The elevations show that the openings on the Eastern and Western facades have closable louvres systems. This will create a interactive building envelope that will change as occupants chose. This acts as an environmental control giving users the ability to shut down or open up the building. They also help to maintain the vertical banding of the facade, enhancing the slender proportions of the towers.

The section and model shows how the four metre floor to floor height can be used to create double height spaces, or an extra mezzanine floor.

Fig. 4.33. Section through Eastern wing, showing vertical arrangement of apartment spaces.
Fig. 4.34. Structural Make-up. Footings, shear walls, point supports, floor sandwich.
5. Structure

Fig 4.36 shows how the concrete shear walls will act as the main structural element. From these walls the timber floor structures will be supported. The concept for the structure is that each apartment is essentially a demountable shell that could be completely stripped and refitted at a later stage without effecting the primary structure, rendering the building adaptable to its future needs.

Timber doesn’t have as good acoustic qualities as concrete so detailing will be vital.
Fig. 4.37. Floor Arrangement One - Three Bed, 2 x One Bed, Studio

Fig. 4.38. Floor Arrangement Two - 2 x Two Bed, One Bed, Studio

Fig. 4.39. Vertical layering of floor arrangements
Apartment Design

Apartment design is considering the arrangement of apartments on each floor level, and further to that the internal planning of the individual apartments.

Design Considerations

Environmental Controls

The aim of any environmental control at this level of the building is to create comfortable living spaces while reducing energy requirements. This will be achieved through orientation, shading, glazing and natural ventilation.

Services

Servicing the apartments with water, heating and cooling, electricity and gas is a basic requirement. Efficiency of these services is key.

Efficiency

It is important that the internal layout of the apartments provide the facilities efficiently, to reduce circulation space to create spacious living areas.

Design Exercises

Plans/Sections

There are two floor arrangements repeated over the eight floors to provide the numbers of apartments determined in chapter 3. Over these three floor layouts there are eight different apartment designs.

Sectional Models

The sectional model (fig 4.35) shows how the four metre floor to floor height can be used to create three levels, meaning alternate apartments can be two stories.

Details

Fig 4.41 shows the way the facade is changed and used as an environmental control as well as an aesthetic feature.
Fig. 4.40. Grouping of wet areas, living spaces and bathrooms to increase efficiency of servicing, and proximity of habitable spaces to natural light and ventilation.
Fig. 4.41. Details of facade openings

Fig. 4.42. 1:200 model of skin detail, smooth and textured.
5. Design Solution

501 Master Plan

The design solution for the master plan is an adaption of Scheme B described above. The scheme consists of four new buildings of a similar footprint to the Star Flats, that ‘fit’ within the patterning of the site. Below is a description and discussion of the design solution.

The Buildings

Four new structures have been added into the framework of the site and its buildings to create a number of housing units sufficient to increase the density of the site to 75 d.p.h.

The positions of the buildings have been determined by the patterning and landscape of the site as described previously. The valley running through the site has been left unoccupied to allow the creation of a green walkway that will draw users of Western Park through the site.

The buildings are the same in design to clearly delineate the ‘old’ from ‘new’. While it is crucial for the buildings to ‘fit’ with their context it is equally so that they do not attempt to mimic the existing.

Circulation

Circulation through the site has been split into two categories, pedestrian and vehicular.

Pedestrian circulation has been achieved through a central walkway along the valley of the site linking the north and south boundaries. A network of paths connect the buildings to the site boundaries, the central walkway and car parking.

Vehicular circulation has been facilitated through the use of a central road linking the old Waiairau Road to Howe Street. This road allows the buildings located closer to the centre of the site to be accessed and provides parallel car parking for visitors. The surface of the road ‘dissolves’ into a permeable gobi block surface as it runs through the valley of the site so the green walkway is maintained. The road is intended as an access way into the site rather than a thoroughfare, this change in surface will illustrate this and keep traffic to a minimum.
Fig. 5.1. Final Master Plan (NTS)
Car Parking

As outlined previously the ratio of car parking is one car park to every apartment. That is 240 car spaces in a mix of above and below ground car parking.

102 car spaces are provided in above ground parks. The majority of these are spread over the site in groups of 8-12 spaces for residents of the original Star Flats and as disabled car parking. I envisage that these car parks would be paved with a semi permeable gobi block system so that the concrete footprint is reduced on the site both physically and visually.

The remaining 138 car parks are located below ground in four basement car parks located under the four new buildings. The main reason for this is to reduce the concrete footprint on the site allowing a reinstatement of the designers original intention of buildings dotted amongst green space. A major feature of the underground parking is that they are not connected to the buildings above by lift but by stair only to encourage residents to engage with the building, other residents, and the surroundings.

Landscaping

The main landscape intentions for this project have been to strengthen the original Modernist idea of pavilions in the park. To do this the footprint on the site has been reduced and more planting has been introduced.

The major landscape feature is the introduction of the green walkway through the centre of the site. Three structured outdoor spaces have been provided close to the original Star Blocks to provide them with usable outdoor space. The main reason for this is the exclusion of decks from the Star Blocks is the primary complaint of residents. Another solution to this problem would have been the modification of the flats to include decks. This is outside the scope of this project and I believe would inevitably detriment the heritage values of the Star Flat blocks.

Density Calculations

Each of the four new buildings contains 35 apartments bringing the overall density of the scheme to 75 d.p.h.
Fig. 5.2. Perspective of whole site, showing relationship between old and new and central walkway through the site.
Fig. 5.3. Photograph of final model.
502 Building Design

The design solution for the buildings will be mainly described through just one of the towers. This is because each of the towers is the same design and is only changed at the ground floor by the topography of the land it is located on.

Aesthetics

The mass and locations of the buildings was the most important element in ensuring that the new buildings didn’t ‘destroy the heritage values’ of either the landscape or the Star Flats. Figure 5.2 shows the overall scheme, how the old and new relate. While the buildings are clearly different in form, the Star Flats are a horizontal block while the new buildings are vertical elements in the landscape, the plan is very similar. As determined through the design of the master plan this was more important than their heights being the same.

The facade treatment and materiality of the installed buildings also help to for a dialogue with the Star Flats. The materials of the Star Flats, concrete, vertical panelled wood, and glass are interpreted in a contemporary way in the new buildings. The basic proportions of the external form are very similar to that of the Star Flats, the cruciform shape in plan is maintained and the panelling of the eastern and western facades is used to inform the same facades of the towers.

As illustrated previously the roof is a very important element in relating to the existing structures on the site. High angle mono-pitched roofs are an icon of contemporary New Zealand residential architecture and the inclusion of them in this scheme is reference to this and the specific roof form of the Star Flats.

Social Interaction

Social interaction is achieved in the buildings through specific design of circulation paths. The two main features are the inability to take the lift out of the car park, and the atrium. The bridges over the atrium mean that the path to one’s apartment is exposed, in turn increasing the chances of ‘spontaneous interaction’.
Fig. 5.4. Plan of entrance canopy (NTS)

Fig. 5.5. Perspective of Entrance canopy.
Environmental Considerations

The environmental features of this design are as follows;

- Orientation of apartments towards north, east and west, never south.

- Corner aspect apartments (except one studio) to allow cross ventilation. Where possible bathrooms and kitchen have been located on an external wall to allow natural ventilation of these wet areas.

- Openings onto atrium to allow indirect light into the back of apartments (reducing the need for lighting).

- Atrium located on the southern facade to act as a thermal barrier to the apartments.

- Large shear walls for thermal mass

- Rain water collection for use as grey water to flush toilets within the buildings. Located on the roof to eliminate the need for mechanical pumping.

- 152 m² of solar hot water panels are included. 3 m² are required to heat an average home, so this is enough to do all hot water heating for the building.

- Small wind turbines have been located on the roofs to take advantage of wind speeds at high levels to provide extra power for the buildings.

- Use of timber as both structure and fit out where possible.

- Apartments are super insulated to reduce heating requirements.

- Low energy usage fittings are specified.

Fig. 5.6. Structural Detail, showing separation of floor sandwich and ceiling structure to allow the ceiling to be removed or altered without effecting the structure.
Fig. 5.7. Floor Arrangement One (NTS)
503 Apartment Design

The main functions of the interior arrangements of the apartments is to be efficient, and to provide comfortable spaces both socially and environmentally.

Level Changes

Level changes have been implemented within the apartments to create allow different functions different floor to ceiling heights where appropriate and two story or mezzanine apartments in some instances.

Openings

The facade is a double skin of concrete, which the windows are set into, and a secondary timber skin. The timber skin acts as a louvre system over the glazing which is operable to allow users to control their environment.

Window Seats

Window seats have been used throughout the apartments to create deep reveal windows and to provide built in furniture and storage
Fig. 5.9. Plan and section of North facing two bedroom apartment from arrangement two
Overall the project has met the outcomes described in Chapter One:

- to identify, in general terms, the successes and failings of Modernism's urban design ideals,
- to relate these findings to Freemans Bay Park to identify the strengths and weaknesses of the scheme,
- to identify the principles of regenerative infill projects through literature and case studies, and apply these to the a master plan design, and
- to produce an architecture that illustrates how built elements can be sensitively added to an existing network of buildings, while incorporating contemporary sustainable features.

As outlined in the introduction there have been three strands of research and design running through this project; one, density, urban design and master planning; two, protecting heritage values, Modernism, and building design; and three, quality of life, housing best practice and apartment design.

At times it has been necessary to prioritise one of these strands over another. To do this the initial research question has been interrogated.

To investigate how Freemans Bay Park can be developed to suitable density levels without destroying the embodied heritage values of the scheme and the quality of life occupants currently enjoy.

The major conflict occurring has been between what current research suggests is best in urban design and what is best specifically for this site. The conclusion reached is that the purpose of this project has been to test whether Modernist design principles have any value in urban design and architecture today, so do they?

The short answer, yes. As outlined in Chapter Two, while many Modern urban schemes failed the intentions behind most Modern architects were sound. There appears to be a difficulty in the translation of theory into practice. This is where the Star Flats differ, and offer an opportunity to learn.

This scheme takes Modernism’s ideals of improved environmental conditions, rationality and efficiency and an emphasis on green space and interprets it for today's housing market.
Instead of improved environmental conditions relating to slums and poverty, it relates to air quality and sustainability. Rationality and efficiency instead of being related to mass production is related to improved planning and systems to create a sustainable building through reducing energy and material waste in both construction and running. An emphasis on green space is retained to uphold the designers original intentions and to offer a site of ecological wealth in an inner city location.

The failures of Modernism, lack of community, reliance on the automobile, and zoning, are acknowledged and endeavoured to be eliminated from this scheme.

Lack of community for this area is not a concern. The community of Freemans Bay and Ponsonby is infamous in Auckland as the cultural centre of the suburbs of Auckland. Steeped in history and at the forefront of providing space for creative industries, community is strong in this area. The buildings and site work to facilitate social interaction to ensure this is continued.

Reliance on the automobile is a massive issue for all communities around the globe for many reasons beyond the scope of this project. The primary reasons for reducing vehicle dependence for the occupiers of this scheme are to improve air quality, reduce the impermeable footprint on the site caused by concrete car parks, and to encourage social interaction. The reduction of dependence is facilitated through the proximity of the site to local outlets, and the location on main public transport routes.

Zoning and the subsequent lack of variety within many Modern cities has been the primary criticism of many. While on could argue that removing all the row and terrace housing from the site to replace them with towers is removing variety the counter argument is in the architecture and the area. The new buildings are markedly different from the Star Flats in their materiality and form creating a dynamic between old and new. The extensive planting that occupies the site creates an animated journey of conceal and reveal that constantly changes. Freemans Bay as an area has a diverse building stock, from villa’s to row housing, to terraces and medium rise, providing plenty of variety. The site is also surrounded by retail and hospitality venues, schools, sports facilities and community centres.
This scheme is not proposed as a whole solution for urban planning but as a means of retaining and respecting some of our Modern heritage. There is no right answer for all urban design, questions. It is variety and intrigue within our cities that make them vibrant and engaging places to be. I believe it is also true that architecture should be site and context specific, that building design and urban strategies should respond to the local conditions. To this end I am not suggesting that the scheme offered by the project is suitable for every city, or that Auckland should be a giant park dotted with buildings. The response of this author has been to the specific site, its buildings and its location.

Modernism has been widely criticised for wiping out large parts of historical cities and denying architectural heritage in design. Yet many architects and urban planners could be accused of the same in their willingness to wipe out Modernism as a period of architectural history. I believe the biggest lesson we can learn from Modernism is to make sure architecture, of any style, is thoroughly investigated before it is dismissed. Buildings good and bad offer something to our cities development and tell a story of our history. By acknowledging the strengths and weaknesses of our existing building stock we can seek to eliminate the latter and enhance the former, to create an urbanism ‘that recognises the social diversity [...] and communal use of space’.\(^1\)

Further research of the principles of regenerative design specific to New Zealand conditions is crucial if the buildings of our towns and cities are to be protected. Another aspect of this issue, that lends itself to further research, is how we can design new buildings to include a level of flexibility, rendering them adapt to suit the rapidly changing world of technology and the way we live.

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7. Bibliography

Books


**Conference Papers**


Web Pages


Journals


Council Guides and Publications


1. Introduction

1.1 Report Objectives

The major objective of this research is to provide a clear assessment of the social, environmental, and architectural values of the Star Flats to aid any future development involving the schemes. Therefore the specific outcome of this report will be an examination of the history of social housing in New Zealand, from the beginning of the 1900s through to today, and more specifically how the Star Flats, as a state housing typology, fit into this progression. The foremost reason for undertaking this research is that little has been written about the Star Flats which are “probably the best known and most liked” of all medium-density housing constructed by the government during the middle of the 20th century.

1.2 Context

State Housing began in 1905 with the first workers dwellings constructed in industrial Petone, but large scale social housing in New Zealand didn’t commence until the 1930s. The ‘garden suburb’ scheme of the 1930s was ‘unprecedented in scale’ and has had a lasting impact upon the development of New Zealand towns and cities. Between the early 1940s and the late 1960s another type of state housing was being investigated, in the form of flats or multi-unit housing. There were, however, very few of these, mainly Modernist, apartment blocks ever built, accounting for only 1.5% of all state rental units. The Star Flats, named so because of their shape in plan, were part of this very small number. Unlike other flats built at the time the Star Flats were a model intended to be constructed many times in various locations. Because of this reproduction the Star Flats are well recognised by many New Zealanders.

As the density of major cities across New Zealand increases the Star Flats run the risk of being demolished because they did not achieve sufficiently high densities. The Star Flats are in particular risk of this in Auckland because they are located in key areas for intensification, such as Drakei and Freemans Bay. Recognizing their importance in the history of the city's modernist architecture, and the quality of their design, this research aims to assess the Star Flats to promote their retention as part of the future of Auckland city.

1.3 Scope and Limitations of the Research

State Housing is a broad topic. While much has been written about State Housing in New Zealand very little literature exists on the Star Flats in particular. For this reason much of the analysis and description of these buildings will come from my own observation and from dissecting Modernist approaches to housing and urban design in the 1950s. This report addresses some aspects of the architectural expression of different periods of State Housing so will avoid discussing the many other issues such as government policy and wider social issues inherent in social housing.
2. State Housing Past and Present

2.1 General History

As a 'new country' capitalism was the driving force behind growth in New Zealand and at the turn of the century the effect of this on the housing market was evident by the neglected condition of large areas of housing in the cities. In 1890 a Liberal government was elected with a mandate to reform this situation. However it took fifteen years and a series of factors to convince, the then Premier, Richard Seddon to intervene. While the obvious factors of health care, failure of the private sector to provide adequate housing and failure of the municipalities to provide housing prompted state intervention in the housing market, the final factor that caused Seddon to act was the threat to his government. He had been elected on the promise of 'progressive legislation', and he could not risk losing public support by failing to act on the housing issue.

The first workers dwellings, of 1905, were supposed to be modest cottages; however their design and construction was of the highest quality. This made them expensive to construct and the cost was passed down to the tenants. Consequently the people these houses were built for found them out of reach financially. This problem is a recurring one in the story of state housing in New Zealand. From the time of the first workers dwellings being constructed, through to the late 1960s, state housing was intended for skilled workers and their families. They were provided for people who, while unable to afford to buy their own homes, were able to rent them 'at no final cost to the government'. From the late 1960s this attitude changed and housing was allocated on 'the basis of need'.

There were two major schemes to follow the workers dwellings before a decline in State activity in the housing market at the end of the 60s. One was the 'garden city' suburban model of the 1930s, and the other an attempt to provide higher density housing in the form of flats. Both of these schemes are discussed further below, however there is a primary assertion that can be made about the general success of State Housing in New Zealand before 1960. As Gael Ferguson attests, government involvement in housing has ultimately been beneficial, by ending housing shortages, lowering rents and causing the worst slums to disappear. Ben Schrader also suggests that the overall impact of State Housing is positive. The involvement of ‘many of New Zealand’s leading architects’ led to higher standards of housing and, he suggests, ‘has meant that the standard of design in state houses has often set the benchmark for other New Zealand housing’.

Fig. 1 - This image shows two houses typical of the workers dwellings constructed between 1905 and 1919.

Schrader, We Call it Home, 18-23.

2. Ibid, 8.
3. Schrader, We Call it Home, 82.
2.2 Suburban Scheme of the 1930s

The impact of social housing on the housing of New Zealanders was relatively inconspicuous until the late 1930s. Since this time the ‘garden suburb’ scheme has remained the most recognisable form of State Housing in New Zealand. No other scheme has come close in terms of scale and influence on the housing culture, and, by 1960 the government was funding more than half the houses being built in New Zealand.

The boom in state housing during the 1930s was the result of a serious housing shortage in New Zealand, caused by war and Great Depression of 1929-1936. New Zealand, as a country reliant on other nations for income, was hit hard by this international economic turmoil, and building activity had nearly entirely ceased. As greedy landlords forced market rents higher and higher overcrowding and congestion became major problems among inner city residential areas.

The issues surrounding housing were among the biggest concerns for the citizens of New Zealand at the time. The progressive promises of the Labour party resonated with voters, and in 1935 the first Labour government, under Prime Minister Michael Joseph Savage, came to power. Although initially the government’s housing reforms were modest, by 1936 the declining housing situation prompted an unprecedented intervention. The government proposed a scheme to build 5000 new homes at a cost of £3,000,000 that would require a new government department, for Housing Construction, and the involvement of the entire building industry. The first house of this scheme was opened ‘amid much fanfare’ in Miramar during September of 1936, by the Prime Minister himself.

Since this time various styles of State Housing have been tested, however it was the housing programme of the 1930s that remains the most recognisable. In 1935, the newly formed Department of Housing Construction was charged with the purchasing of land, master planning, specific design of the houses, and supervising the construction of the new suburbs. The department, headed by architect Gordon Wilson and town planner R.B. Hammond, invited submissions from practising architects for ‘designs within the guidelines’ decided on by Wilson and his team. A large number of these designs were employed, together with many more produced from within the Department. By 1945 around 300 different plans were in use over the scheme.

1. At Home in New Zealand 125.
2. Schrader, We Call It Home, 35.
4. ibid, 126.
5. ibid, 126.

Whilst the English cottage aesthetic of the designs was not new, the departure from the bungalow or Victorian villa typologies, popular during the 1920s and 30s, was surprising. During the early stages of the scheme an emphasis was placed on variety within the designs of these houses in reaction to the assertion that mass social housing eventually led to the creation of slums. However as the need to ‘gauge efficiency’ of both the designs and construction of these houses arose, some standardisation was inevitable. Fittings and joinery were the main elements to be standardised, including doors and frames, kitchen equipment, bathroom equipment, cupboards and windows.

While the dwellings were all of quality design and construction, it was the urban planning aspects of the scheme that made them popular at the time and that has had the most lasting impact on New Zealand.
The ‘notion of a garden suburb made up of compact cottage-like houses was the very touchstone of Labour’s programme’, illustrated in fig. 3. The ideal of a stand-alone home on a large section in the suburbs that is ‘so recognisable in the towns and cities of this country’, was strongly promoted by the government. Even at the time though, people were beginning to see the potential dangers of suburban sprawl caused by this model. Gordon Wilson managed to convince John A. Lee, then Minister of Housing for Labour, of the benefits of constructing multi-unit blocks in the cities. The following section discusses the progression of this typology in New Zealand.

2.3 Flats as a State Housing Typology

While New Zealanders preference at the time, and probably still today, was for a detached house on a private section, pressures on housing became such that higher density living became necessary to explore. Cedric Firth wrote in 1949 "probably never before have so many houses been wanted so quickly. And perhaps never before has the problem been so complex". Many architect’s over the world were preoccupied with the question of how to design housing for the masses, particularly in Europe where the population increase was coupled with the need to rebuild buildings destroyed by the war.

In Europe and America many immense blocks of flats were built as social housing for the disadvantaged. This tenement housing was often insanitary, overcrowded, structurally unsound, over-priced and provided inadequate natural light and ventilation. In New Zealand the word ‘flat’ had strong associations to these overseas examples, and all of their unfortunate vices. Cedric Firth wrote in 1949 “In a country such as New Zealand...any excursion into the erection of apartment blocks demands an excuse, even an apology”, indicating just how unpopular the typology was. However housing was desperately needed and there were people outside of the nuclear-family norm who ‘had interests other than babies and gardens’.

The reasons given for building flats in New Zealand were numerous; however the main four used to justify their construction to the general public are as follows; one, the housing shortage; two, the availability of materials such as concrete and steel over timber; three, the use of these developments to clear ‘slums’ that had formed around the periphery of some New Zealand towns and cities; and four, as possible solution to reduce urban sprawl.

So in a bid to generate housing for the masses and at the same time limit suburban sprawl, a number of medium-density schemes were built during the 1950s. The government chose to change the name of this typology, hoping this would be enough to avoid the ‘unattractive associations’ with the word flat. Cedric Firth said “It is hoped that the term ‘multi-unit’ will suffice”. Many of these new apartment blocks saw “a direct engagement with modernist ideals”, most likely a reference to the influence of émigré European architect’s, such as Ernst Pitschke and Frederick Newman.

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Ferguson, Building the New Zealand Dream, 137.
*ibid*, 7.
*ibid*, 1.
Martin, Built for Us, 186.

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*Cedric Firth, State Housing in New Zealand (Wellington Ministry of Works, 1949), 2.
* Gatley, "Going up Rather than Out," in At Home in New Zealand, 144.
* Firth, State Housing in New Zealand, 33.
* ibid, 34.
* Gatley, "Going up Rather than Out", 145.
* Firth, State Housing in New Zealand, 34.
* Gatley, “Going up Rather than Out,” in At Home in New Zealand, 141.
Modernist housing blocks were built in Auckland and Wellington, beginning with the Centennial Flats in Berhampmore, Wellington completed in 1940. The Centennial Flats were a rapid departure from the garden suburbs of previous State Housing schemes, however at only two stories high they were not of a high enough density to make any real contribution to the reversal of suburban sprawl. Next to be built were the Dixon Street Flats, also in Wellington, completed in 1944, that were unprecedented in the New Zealand cityscape. At ten stories high the “Dixon Street Block was the largest and, by far, the most prominent project” undertaken by the government at this time. Following these two projects a number of apartment blocks were built including the McLean Flats and the Hanson Street Flats, both in Wellington, (1943-44), and the Symonds Street Flats (1947) and Greys Avenue Flats (1945-47), both in Auckland. The Labour Government built a total of 12 multi-storey blocks before being voted out in 1949, all of a similar Modern style, designed as one off solutions for specific sites.

Many architects and engineers in the Housing Construction Department of the government were 'interested in a series of ideas about urban form and city living that originated in the modernist movement'. When the National Government was elected in 1949 an emphasis was placed on improving urban infrastructure. It was during the period of the next ten years that the Auckland Motorway was unveiled and the Auckland Harbour Bridge was constructed. There were further experiments with medium-density housing. The Star Flats were one of these experiments; based on the Modernist idea of the pavilion in the park, the flats were conceived of as a model of housing that could be reproduced many times in varied locations.

While many of the Modern apartment blocks overseas were condemned as places of vice and squalor, the most famous example being the St Louis's Pruitt-Igoe Apartments that were demolished only 17 years after they were first opened, the multi-unit blocks in New Zealand fared well. Today most of the blocks are still in State ownership and are requested by many tenants who now see the benefits of living in higher density housing. Julia Gatley verifies their architectural success saying ‘they have been identified as key buildings in the development of modern architecture in New Zealand’.

3. Star Flats

3.1 History and Context

3.1.1 Introduction

In the late 1950s impetus for flat design began to pick up, and from 1957 a number of schemes were trialed. The government experiments with low-rise medium density housing during the 1950s included duplex, atrium and cross-over flats. Many of the multi-unit housing schemes are heavily inclined to Modernist ideals. This influence is particularly prominent in the Star Blocks, which also provided the highest density at 89 people per acre.

The Star Flats were first mentioned in 1955 as a type of medium-density housing by the Housing Division of the Ministry of Works, with the first block completed in Maitland Street, Dunedin in 1962. Frederick Newman, an Austrian immigrant architect, oversaw the design of the scheme and the European influence is clearly visible in the cubic forms, curtain walls, mono-pitch roofs, wide eaves and sun screens. Gael Ferguson remarks "These designs abandoned all pretence that they were merely larger single houses" as had been the practice in previous multi-unit schemes. Because there is little literature on the Star Flats the best way to understand the approach taken by their architects is to understand the ideology of the Modern movement.
3.1.2 Modernism

At the turn of the 20th century an architectural revolution was underway. The revolution was led by a new generation of architects with a desire to create a style of architecture that was representative of the circumstances from which it arose. The movement became known as Modernism. This period of time saw the formation of buildings and townscapes radically different to anything seen before. Two of Modernism's more prominent figures, its so-called founding fathers, Frank Lloyd Wright and Le Corbusier were instrumental in establishing the general design intentions of the movement. Le Corbusier’s urban strategies, and in particular his ideal city plan of Ville Radiouse or the Radiant City, polarized people at the time of creation. - In his own time, his buildings were dismissed, his books attacked, and his lectures sometimes booed - but all have since had a profound and lasting effect on many architects, urban designers and environments. Modernism whilst being practiced for the dominating period of the twentieth century has always had its critics, especially the public, and especially in relation to urban design, as will be discussed further.

The Modern movement was a direct reaction to the social, economic and cultural circumstances of its age. There were many factors that led to the emergence of the new style, Brent Brolin suggests that two were of particular importance; technological advance and the emergence of the wealthy middle class. However there were many others, and one which relates specifically to urban design was a genuine concern for the situation of the nineteenth century industrial cities. The exponential rise of industry and subsequent influx of people to major urban centres caused huge overpopulation resulting in disease and vice becoming rampant within the confines of these cities. Le Corbusier and to an extent all Modernists directly related these social conditions to the physical conditions of the places, they considered that architecture was a way of addressing these issues.

Le Corbusier, published a series of ideal plans of cities, houses and other prominent typologies to illustrate to the other architects designs appropriate to the age. His most influential book on town planning, titled “City of Tomorrow and its Planning”, was first published in French in 1929 and later translated to English. The book describes his ideal city plan, the Radiant City or Ville Radiouse. In response to his hatred of streets Le Corbusier omits them totally from his plan by creating a series of super highways to deal with the majority of traffic and setting the buildings back from the smaller service roads in green space. The roadways dedicated to vehicles were raised five meters above the earth to ‘give back’ the ground plane to the pedestrian, with pathways running in orthogonal and diagonal projections.

- Le Corbusier, The Radiant City, 124.

Housing was contained within large monolithic blocks, and this is where much of the criticism is centered. The housing blocks were all of the same design and led to an urban landscape that contemporary critics typically describe as a grotesquely monumental graveyard of vast monoliths, strung together by superhighways.

It is from this idea of housing set amongst generous park-like grounds that the Star Flats emerge. The difference between European examples and those in New Zealand was the scale at which these housing developments occurred. Where the ‘graveyard of vast monoliths’ may have been the norm for housing in parts of Europe and America, Modern housing blocks were the minority in New Zealand. The buildings were also of a different scale, especially the star flats which at only three stories high house 12 flats each, compared to, for example, the Unite de Habitation that included 337 split-level apartments. While Modernist housing developments overseas were broadly a massive failure they have fared well here.

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- Peter Blake, Form Follows Fiasco: Why Modern Architecture Hasn’t Worked (Canada: Little, Brown and Company, 1977), 80.
3.2 Star Flats in the 1960s

One of the major aims of the Star Flats was to increase density close to city fringes to reduce suburban sprawl. While every Star Flat scheme has a slightly different density the government of the time calculated and promoted the density of the schemes based on an average figure. This figure was 89 people per acre, which when compared with the 36 people per acre based on the state housing scheme of the 1930s, was a vast improvement. However the locations of the Star Flats does not paint such a good picture, especially in Auckland. Many of the Star Flats in Auckland are located in suburbs far from the city fringe such as, Orakei, Penrose, Blockhouse Bay, Tamaki and even Northcote on the North Shore. Even by today’s standards these suburbs are remote from the city; in the 1960’s these locations may have seemed a strange choice to limit suburban sprawl.

Gael Ferguson reports that ‘the Corporation found it difficult to let them. Some Corporation officers recommended that the Division confine them to inner-city sites, but the government’s reaction was that applicants were being ‘too choosy’’. In the context of the time this seems an odd comment to make. Cedric Firth in his book published in 1949 by the Ministry of Works discusses the benefits of multi-unit dwellings, suggesting that ‘The advantages offered by a centrally situated multi-unit development - easy distance from the centre of town and from places of employment, reduced transport time and cost - may well outweigh the restrictions that this form of dwelling provides’. This statement would suggest that the government recognised that this type of living was best suited to central urban environments, yet many of the schemes were built in suburban zones. Another aim of these flats was to house people other than those in a nuclear family situation such as single people, the elderly, couples without children and single parents. From anecdotal evidence Ben Schrader’s concludes that some of the ill feeling towards the flats was brought about by the public perception of these kind of living situations. During the 1950s, 60s and even 70’s the nuclear family situation was still the dominant social form, and being outside of this group one would have experienced many of the prejudices associated with being a minority. Therefore it is difficult to say how much of the ill feeling towards the flats from tenants was due to social conditions and how much was a direct criticism of the architecture.

3.2 Star Flats Today

50 years on many of the Star Flats remain, ‘with butterfly roofs and timber joinery intact’, which is testament to their quality construction and design. The public impression of the Star Flats now is difficult to gauge accurately, partly because no work has been done in this area and partly because while many of the Star Flats are still in public ownership some of the developments have been opened up to privatisation. This has led to a gap between the appearance and therefore public perception of the schemes. For instance in Auckland, the Star Flats in Northcote are still in public ownership, they are run down, badly tenanted and in an undesirable location, however the Freemans Bay Star Flats are largely privately owned and managed and as such are well maintained and sell for upwards of $400,000.

The issue of location is still a contributing factor to the popularity of the flats as can be seen by the reputation of the Freemans Bay scheme. Cedric Firth wrote in 1949 that for families with perhaps one child the multi-unit dwelling affords more freedom for the pursuit of their particular interests, should they be sport, concerts, theatres’. This statement is probably more true today than it was in 1949. Society has undergone a massive shift over the past 50 years and the nuclear family is no longer dominant. There are many people that choose to live close to the city in apartments for all the reasons cited by Firth in 1949, however these benefits are still not valid for the schemes in the outer residential suburbs.

A recent study of urban density in Auckland, commissioned by the Auckland Regional Transport Authority, surveyed 13 popular residential areas of Auckland city, and found the average density to be 27 dwellings per hectare. The same report suggests that 60 dwellings per hectare are needed to support efficient public transport systems. I have calculated the density of four star flat schemes in Auckland (Freemans Bay, Orakei, Blockhouse Bay and Penrose) to range from 38 - 65 dwellings per hectare. While the lower of these figures is still higher than the average Auckland suburb, it is not high enough to justify their retention as part of a sustainable future vision of Auckland city.

After 50 years, their architectural impact continues, they are considered key buildings in the progression of Modernism in New Zealand. So while their contribution to the stock of state housing was limited in terms of the numbers built, the contribution of the star flats to the visibility of the state influence in housing was marked.

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2. Ferguson, Buildings the New Zealand Dream, 193.
3. Firth, State Housing in New Zealand, 34.
6. Firth, State Housing in New Zealand, 35.

The Auckland Regional Council lists the rateable capital value of the apartments at $295,000, and the land at $175,000. http://maps.auckland.govt.nz/AucklandRegionViewer/ (accessed March 25, 2010).

The Auckland Regional Council lists the rateable capital value of the apartments at $295,000, and the land at $175,000. http://maps.auckland.govt.nz/AucklandRegionViewer/ (accessed March 25, 2010).
3.3 Physical Description

The Star Blocks were designed as a model that could be repeated many times and therefore nearly all the blocks can be described in the same way. There are only three versions of the blocks and the differences are determined by the slope of the land they are situated on. The plans and sections that follow are the version labeled Mark III, and appear to be for flat sites, where the blocks are made up of exactly three storeys. Where the blocks are located on a sloped site, and extra half basement level is added that houses two smaller one bedroom units, similar to those on the ground floor of this set of plans.

The star blocks are supported structurally by a system of reinforced concrete block walls, this structure also form the walls between each apartment. This means that internal dividers within the apartments are not load bearing and therefore the internal space can be easily manipulated. High quality finishes were used, including timber flooring, screeded concrete stairs, plywood doors, and timber balustrades. Exterior materials were also well thought through and detailed, including concrete, timber and aluminum.

3.4 Assessment

The assessment of these flats will be carried out against the initial aims of the report, to determine the social, environmental, and architectural values of the Star Flat schemes. It will also attempt to outline future opportunities for the flats and potential threats to their continued existence.

The core value of these flats is that they provide a rare example of a good Modernist multi-unit housing scheme. Socially the flats are representative of the Government’s efforts to provide housing for the workers of New Zealand. Their attempt to provide communal living areas such as laundry and external garden spaces was brave in the face of preferred separate living. What the flats also illustrate though, is a greater ambition on the part of the government and the architects involved, to re-shape the cities and towns of New Zealand to become truly more ‘urban’.

The environmental value of these flats can be seen in two categories; one, the landscape value, and two, the ability of the flats to efficiently use resources. The landscape value of many of the Star Flat schemes, and particularly of the Freemans Bay development, is considerable. The idea of the pavilion in the park that drove the design of the Star Flats means that the landscapes were equally as thought through as the buildings. At Freemans Bay prominent Modernist landscape architect Harry Turbott was employed to design the gardens, the large established trees and plants at Freemans Bay add much value to the properties both economically and aesthetically. However it is this idea that ultimately caused the biggest fault of the schemes, insufficient densities. The contribution of the flats to the environment in terms of energy efficiency is not so good though. When designed 50 years ago, sustainability was not a factor on any architects mind. Therefore the large panels of single glazing will mean that the energy requirements to heat the buildings will be significant. However in terms of embodied energy the buildings fare well, they have lasted 50 years with very little need of repair, and should endure at least another 50 years.

It is the quality of the design and construction of these buildings that makes them valuable in terms of the architectural progression of New Zealand. The Star Flats are one of a very small number of Modernist housing in the country, for what was an extremely influential style overseas the impact of Modernism in New Zealand housing was limited. The internal arrangement of the apartments was exceptional, the provision of truly modern spaces, that were light and intricately detailed, was something not seen in many Modern housing schemes overseas. The construction of the flats was innovative at the time using what were reasonably new materials, concrete and some pre-fabrication of the external sliding doors. The construction of the flats was of a very high standard which can be seen in the condition of many of the flats now.
3.5 Opportunities

As the areas around many of the Star Flat locations increase in density there are a number of scenarios that could be the future of the Star Flats. The prominent three as I see them are: one, strict restoration and conservation, two, demolition to make way for new developments, and three, re-densification and development of the sites.

While strict restoration and conservation would see the retention of the Star Flats for future generations, it would not render the flats a useful addition to a growing city and would not entirely remove the threat of demolition. Obviously demolition would be the worst possible outcome for these flats, the loss of these buildings for future generations to live in and learn from would be regrettable. To increase the density of the Star Flats through further development would ensure their retention whilst allowing the flats to be relevant to current expectations of inner-city housing developments.

Flats are a form of housing that was not explored much before this time or since this time in New Zealand. The flat typology is becoming more relevant today as the issue of suburban sprawl becomes critical, and the density of residential areas is forced to increase. The development of the Star Flats in Freemans Bay to a density required by this city fringe suburb would not only ensure their retention but would also provide an opportunity to learn from what is a great example of multi-unit housing.

4. Conclusion

4.1 Use of this Research

This report recognises the threat on the many Star Flat blocks located in fringe locations that will, in the coming years, be developed and increased in density. Therefore the main intention of this report is to provide a discussion of the significance of these schemes in the architectural history of housing in New Zealand. The hope is that this research could be used to aid decision making in relation to the future of the many Star Flat developments around the country.

Another intention of this report is to provide a thorough account of what is a very good example of multi-unit housing in New Zealand. Many houses in the form of flats, apartments and units have been built since in New Zealand and the vast majority have ignored completely all of the values, described above, that the Star Flats posses. Architects of today have learnt very little from these buildings and have failed to use any of the ideas for housing embodied in the Star Flats for in new projects. Sadly many recent building projects have in fact retreated from the standards set by the Star Blocks. Therefore a future use of the research could be to highlight the positive aspects of the Star Flats to the architects of today to learn from for the housing of tomorrow.

4.2 Potential for Further Research

There are two areas of research that could be further pursued; one, is factual, historical research, and the other, is research of possible futures for the Star Flats through design.

Further historical research is needed in order to be truly useful as a guide for future decision making, in terms of the Star Flats future development. There are many areas this report hasn’t covered such as maintenance issues, obsolescence issues, legal issues, structural issues, and many more, all of which deal with facts about the past and present of the flats.

The research of possible futures of the Star Flats would involve working through speculative scenarios of what could or should be done with the flats. This kind of research would be based on the above historical or factual research but would be carried out ‘by design’. It is imperative that the future of the Star Flats is discussed through design, because it is impossible to make the ‘right decision’ without first exploring the architectural possibilities.
B. Infill Precedents

Eblana Avenue Project

Architect: Dennis Byrne Architects

Program: Mixed Development, 77 x 1–3 bed apartments, 1290 m² of office and retail.

This project completed in ????, is located in an established inner city site in Dun Laoghaire, Ireland. The architects solution to the tight site has been to create a central public square by placing the mass of the buildings around the perimeter of the site. Conroy say's the solution is a poetic urban gesture - carved at the scale of the block itself.

The central square has spaces where passersby or residents could dwell, however the square seems more to function as a thoroughfare. The success of this aspect could have been increased by more clearly defining dwelling spaces and walking routes.

What is particularly successful about this project is the way its scale and detailing, flows flawlessly with the pattern of buildings on the street. Whilst the style is unmistakably contemporary, the scheme does not feel ‘new’ to the area.

Student Accommodation, Cork.

Architect: Tynan Owens Architects

Program: Student Accommodation for the University College of Cork.

This project completed in 2004, is located in the city of Cork, Ireland provides accommodation for the cities university students. The architects web site describes it as “a singular extruded ‘zig-zag’ form [which] creates a sequence of dynamic spaces at a raised podium level”. While the exterior appearance of the building is a bland repetition of strip windows and panelling, the success of the building lies in the ‘dynamic spaces at a raised podium level’.

The ground level of the building rises and falls to meet connecting pathways, at the same time the building lifts to create double height voids to allow pedestrian movement to engage with the building. It is the buildings ability to create an interactive ground plane, which not only allows any lines of movement that were present before the building was constructed but also improves theses movement lines. This is particularly relevant to the Freemans Bay scheme, as it suggests a way to engage with the site and its occupants without effecting the existing buildings.

2 http://www.dta.ie/ (accessed April 25, 2010)
Fig. 16. Talbott Park Master Plan produced by Boffa Miskell

Fig. 17. Talbott Park. Refurbished Star Flat
Talbott Park

Detailed Masterplan: Boffa Miskell with HNZV and Auckland City Council

Architects: Architectus, Bailey Architects, Crossen Clarke Carnaghan Architects, Stapleton Architects, ASC Architects and Pepper Dixon Architects

Program: The addition of 111 apartments to an existing 5 hectare site of 108 apartments

The Talbot Park project is one of six ‘community renewal’ programmes undertaken by the Housing New Zealand Corporation (HNZC) since 2001. This specific project was begun in 2002, and is seen by the HNZC as ‘a partnership with the local community and Auckland City Council’.3

The existing 108 apartments, from the nine Star Blocks, were refurbished and a further 11 mixed typology housing was added. While the intention of the master plan was to create ‘a sense of identity for the community from the diversity and quality of the buildings’,4 I believe the inclusion of so many architects in the process has lead to a disjointed and incoherent scheme.

Socially the project has been very successful. However the low socioeconomic group this development caters for is very different to that of the Freemans Bay demographic. Another successful aspect though is the introduction of public space and sustainable features such as solar water heating, rain gardens, rain water collection systems and homes designed to take advantage of sun, rain and wind.

The Ministry for the Environment admits the alterations made to the Star Blocks are ‘not particularly in keeping with the original architecture but they provided practical improvements for tenants’.5 Neither the alterations to the existing or the addition of new buildings sit comfortably with the existing Star Flats and I believe this is of detriment to both the social and architectural success of this project.


4 Ibid.

5 Ibid
C. Housing Precedents

A difficulty of designing mass housing is that often the architect does not know who they are designing for. And even if they did that person may change many times over the life cycle of the building. It is important to keep in mind that while all the number games inherent in housing design are a crucial factor to the success of the scheme, it is ultimately a humanitarian exercise.

Literature Review

How to house people has been a topic of debate and discussion for the entire history of human civilisation and will continue to be as people need places to dwell. Therefore there are an overwhelming number of texts available on the subject of housing. The search is narrowed somewhat by the typology of mass housing as opposed to a single dwelling. Because of the huge number of resources available I have limited my reading to two main sources; one, Typology+: Innovative Residential Design edited by Peter Ebner giving a broad overview of leading mass housing design in Europe; and the other providing a contemporary view on the now established idea of open plan living, One Space Living by Cynthia Inions.

The first book Typology+, is divided into four chapters that deal with what the author considers to be the big issues of mass housing. These are, circulation, living spaces, outdoor spaces and building volume. At the beginning of each section the authors critically discuss the topic, outlining good and bad examples of how the problem can be solved in mass housing projects. Then a number of examples are given following the text. The writing in relation to the examples is very brief and only discusses the one aspect of the scheme, depending on which chapter it is assigned. This text is uncritical which suggests the authors only chose good examples for the book.

This book has been used to determine a series of criteria or factors which will need to be researched further to ensure a successful outcome of this project.

The second book, One Space Living, discusses projects where the house/apartment is one large volume, only divided subtly with screens or partitions. Over the last 50 years the idea of open plan living has become the dominant form of domestic planning. The author illustrates through
text and precedents the benefits of extreme open plan living. While the author is not critical of her own ideas the book is thorough and well researched.

This book is relevant because it provides a contemporary view of what is really a Modern idea.

Housing - Good Practice

The following is a set of factors that have been derived from the above literature as crucial to the success of mass housing projects.

- Density - an appropriate level of density will ensure that the scale of the project is suitable to the infrastructure and character of the surrounding area.

- Access - vehicular and pedestrian access to the site needs to ensure efficient use of space, and reduced traffic loadings on surrounding roads.

- Circulation - the success of circulation within the building/s will be a balance between efficiency and creating spaces which are pleasant to move through and will facilitate social interaction.

- Floor area and volume - Freemans Bay Park is a large site in an affluent area where space is abundant so efficiency is not the key driver as it would be in government social housing.

- Outdoor Spaces - Outdoor spaces need to be well planned and located, appropriate to the residents. The balance of public spaces and private outdoor spaces will be crucial.

- Social Interaction - Based on the current workings of the Freemans Bay scheme I believe social interaction should be facilitated in this scheme.

- Privacy - Maintaining privacy for residents becomes more difficult as density increases, but is crucial to the success of the scheme.

- Visual Interest - The buildings and landscapes need to be dynamic and engaging.

Precedent Studies

I will base the following analysis on the above six criteria outlined as crucial to the success of a mass housing scheme. Not all criteria will be discussed for each project.
Beaumont Quarter, Auckland, NZ

Beaumont Quarter, a residential development, is located 1km from the Freemans Bay Star Flats. The scheme consists of 240 apartments on 2.4 ha, and was completed in 2007, it is the highest density scheme in New Zealand.

The aims of the project are similar to those of this thesis and for that reason this scheme is relevant. The aims of the scheme were to provide a variety of apartment sizes and typologies, to integrate the existing heritage buildings and to provide an urban environment close to the Central Business District.

Access - The ability for residents to park their car close to their individual apartments is unusual in a scheme of this density. The pay off for this is a lot of roading in the site, and reduced public green space.

Circulation - is quite expansive in this scheme, most apartments have a private entrance and are able to park at their front door.

Floor Area/Volume - The planning of the apartments is good and there is a large variety of apartment typologies. The internal environments of many of the apartments are stimulating, including central courtyards, or external vistas.

Privacy - The privacy of residents within their apartments is the weakest aspect of this scheme. While some visual screens have been added to apartment facades, the surrounding roads are very busy and people driving by can see into the apartments fairly easily.

Visual Interest - The simple boxey design is contemporary but appears a little bland.

Rosenstrabe Residential Complex

The Rosentraube Residential Complex is located in Dornbirn, Austria and was designed by Gnaiger Mossler, completed in 1999.

Access - the single block of apartments is easily accessed from a single entry point on the ground floor, or via the underground carpark.
Circulation - The use of an internal atrium space creates a light filled circulation space. This allows the architects to create entrances to each apartment that have more ‘ceremony’ than the typical stacked apartment building. This space also has the potential to act as an environmental control for the apartments.

Floor Area/Volume - The whole building is divided up into evenly sized bays which can be connected to one in other to create a very large apartment or a series of smaller apartments. The flexibility this offers is important to creating a series of apartment typologies.

Outdoor Spaces - The building is set on a large green site, but apartments also have an external private balcony.

Social Interaction - Social interaction is facilitated in the central atrium which acts a street frontage would in a suburban development, an interface between users of the building.
D. Original Drawings

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