

# **Rise, Ruin & Regeneration**

*An examination of the regeneration of post-war suburban state housing  
in New Zealand*

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## **Abstract**

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Over 70 years since it was completed, the house at 12 Fife Lane, Miramar, New Zealand's first state house, looks unchanged. However, the intervening years have seen the failure of some state housing models, the deteriorating condition of others, as well as shifting and increasing housing demands.

This thesis examines the urban and architectural design, and the subsequent redevelopment, both private and state-initiated, of post-war suburban state housing in New Zealand.

The objective of this thesis is to understand through analysis of existing literature, case study fieldwork, and redevelopment examples, the evolving urban and architectural design of these areas and dwellings, which have arguably shaped the residential face of the nation.

The outcomes of this thesis are a series of design strategies for the regeneration of post-war suburban state housing in New Zealand. The purpose of these regenerative design strategies is to address a range of significant issues that the Housing New Zealand Corporation faces, while acknowledging the remaining value of the original investment in post-war suburban state housing.

The regenerative design strategies are developed from the earlier research, and are broken into three distinct, but inter-related topics. These are suburban environments, state properties, and state houses, and are examined through a specific design case study. The design case study articulates the potential of regeneration to address a number of issues which became apparent through the research.

This thesis concludes that while state housing may never again signify in every sense the 'very heart of the New Zealand dream' (Ferguson, 1994, p.117), through regeneration it can, once again, be a certain benchmark for housing generally, and can continue to provide for the nation for at least another 70 years.





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**Chapter One**  
*Introduction*

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## Introduction

This thesis examines the urban and architectural design, and the subsequent redevelopment, both private and state-initiated, of post-war suburban state housing in New Zealand. The objective of this thesis is to understand through analysis of existing literature, case study fieldwork, and redevelopment examples, the evolving urban and architectural design of these areas and dwellings, which have arguably shaped the residential face of the nation. The outcomes of this thesis are a series of design strategies for the regeneration of post-war suburban state housing in New Zealand, which are examined through a specific design case study.

This thesis is of significance for a number of reasons. Firstly, as identified by Housing New Zealand Corporation (HNZC), there are many contemporary issues facing state housing, a number of which have urban and architectural implications. These include the following:

- The high current demand and predicted increasing future need for accommodation for lower socio-economic groups. As of June 2011, there were 8,886 people on HNZC waiting lists (Housing New Zealand Corporation, 2011).
- Of the 69,000 properties owned or managed by HNZC, over 20,000 have been identified for redevelopment, reconfiguration, outright disposal, or disposal and replacement (Housing New Zealand Corporation, 2010b, pp. 2, 30).
- With 19% of state houses in the wrong areas for those in greatest need, HNZC plans to sell off low-demand and premium state housing areas to reinvest in high-demand areas (Collins, 2010; Housing New Zealand Corporation, 2010b, p. 31). In addition, it also seeks to improve social outcomes through the provision of more mixed-tenure housing (Housing New Zealand Corporation, 2010b, p. 31).
- Housing demands have also shifted – instead of the ‘traditional’ nuclear family, HNZC has identified that currently, the demographics most represented as in greatest housing need include elderly, disabled, single-parent and large families (Housing New Zealand Corporation, 2010b, p. 3). Consequently, two-bedroom and four/five-bedroom dwellings are in significant demand – in contrast with the archetypal three-bedroom dwelling which comprises the majority of the existing state housing stock (Housing New Zealand Corporation, 2010a).

Secondly, the history of state housing in New Zealand reveals that for all of the success of the scheme, there were also many failures and criticisms (Arps, 2011, p. 3). These, justly or not, have resulted in an infamous perception and some less than desirable environments. While acknowledging that state housing may never again signify in every

sense what Ferguson (1994, p. 117) regards was the 'very heart of the New Zealand dream;' this thesis endeavours to improve these deteriorated environments through regeneration, with the belief that state housing can, once again, be a certain benchmark for housing generally.

## **Scope**

As opposed to a bottom-up method of inquiry and a reliance on user input, this thesis is a top-down inquiry, the strength of which is based on expert analysis of the topic.

While not denying the existence of social, political, and economic factors, the focus of this thesis is on the urban and architectural design of post-war suburban state housing in New Zealand.

The outcomes of this thesis are based on the findings of existing literature, case study fieldwork, and redevelopment examples. While contemporary urban design literature and existing HNZC guidelines are examined to a certain extent, it is not the purpose of this thesis to test these, as there are a number of recent developments that do. Neither is this thesis out to establish a new model state house, instead, one of its foci is the regeneration of post-war suburban state houses, which has previously been limited in extent.

In addition, although urban and architectural character is considered, heritage preservation is not the intention of this thesis.

## **Methodology**

This thesis consists of six chapters. Based on existing literature, the second chapter provides a brief history of state housing in New Zealand and those factors which can be seen to have influenced its establishment and evolution, including its precursor, the Workers' Dwelling Act; the Garden City movement; and private-sector housing. Recent HNZC initiatives are also identified, as are criticisms, and urban and architectural design issues that have contributed to the demise of state housing in New Zealand.

The third chapter is concerned with fieldwork undertaken in four post-war suburban state housing case study areas – Naenae and Epuni in Lower Hutt, as well as Point England and Glen Innes in East Auckland. It is also concerned with both private and state-initiated redevelopment examples from these regions. Through the fieldwork and redevelopment examples, the research is able to track the evolution of selected properties and suburban environments over a 40-70 year period. During this time, the properties have had multiple tenants or owners. The reason for examining privatised state houses (and equally areas where private ownership is high) was that it was anticipated that they would exemplify redevelopments that could be of significance to state housing generally.

In the first section of the third chapter, the collated and analysed fieldwork data is presented as three separate comparisons, following an overview of the case study areas. These comparisons yield information about the original establishment of each area, as well as their evolution and redevelopment at both an urban and architectural level. The significance of these comparisons is the way in which the findings can be interpreted in terms of design issues and responses. The second section of the third chapter documents and analyses five private redevelopment examples from Lower Hutt, and four contemporary state redevelopment examples from Auckland. The analysis of these redevelopment examples overcomes certain limitations of the fieldwork, while also extending its findings.

The fourth chapter establishes design strategies for the regeneration of post-war suburban state housing in New Zealand based on the urban and architectural design issues and responses identified in the previous chapters. These design strategies are classified into topics developed from the fieldwork that extend into the design case study.

The fifth chapter is broken into three sections. The first section provides an overview of the design case study area – Otara, South Auckland. As the area has a high percentage of Pacific peoples, the second section examines Pacific housing and urban design. Although not the focus of the thesis, this research was completed in order to make culturally informed decisions in the design case study. This research also identifies what is arguably a gap in existing HNZN literature with regards to urban design for Pacific peoples. Subsequently, this section also establishes principles to address this issue. The third section describes the design decisions made in response to these Pacific housing and urban design principles, site-specific issues, as well as the regenerative design strategies established earlier. These operate at three distinct, but inter-related levels – master planning, intermediate-scale urban design, as well as dwelling additions and alterations.

The sixth chapter discusses and concludes the findings of this thesis. Three main points are reiterated. The first point identifies the potential of regeneration of post-war suburban state housing to address contemporary and future issues facing HNZN. The second point examines the potential of regeneration on a broader scope and scale than previous HNZN redevelopments. The final point identifies the potential of post-war suburban state housing to be more culturally appropriate through regeneration. This thesis acknowledges the original investment in post-war suburban state housing and concludes that through regeneration, it can continue to provide for the nation.





## **Chapter Two**

### ***A Brief History of State Housing in New Zealand***

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## Foreword

Although developed upon, sections of this chapter have been previously published in the form of a conference paper for the Society of Architectural Historians, Australia and New Zealand's 28th Annual Conference in Brisbane, 2011 (See: Arps, 2011). Additionally, due to the limited existing literature on the subject, the work owes much to that of Gael Ferguson and Ben Schrader who both provide comprehensive, government-commissioned, histories of state housing in New Zealand.

## New World Immigration

'Portrayed as the New World to European settlers, New Zealand offered reprieve from the squalid slum conditions that had evolved under the rapid industrialisation and unprecedented population growth of the eighteenth and early nineteenth century' (Arps, 2011, p. 2).<sup>1</sup> Early 1840s promoters of settlement in New Zealand emphasised a purely rural vision, 'a labourer's paradise,' in which 'towns were to be no more than embarkation points for the true purpose of emigration, rural settlement' (Ferguson, 1994, p. 26). While later schemes 'may not have envisaged an entirely rural destiny,' 'even the New Zealand Company's organised settlement schemes [...] which were based on establishing new towns, extolled the benefits of a society which mimicked the structures of rural English society,' and used imagery 'rural in its focus' (Ferguson, 1994, p. 27) to attract settlers.

Following the colonising principles of Edward Gibbon Wakefield, the New Zealand Company sought to establish a 'Better Britain' (King, 2003, p. 172); however, the conviction of 'providential immunity from poverty, inequality, and political conflicts of the Old World,' 'always strong in new nations' (Davison, 1995, p. 41), proved unattainable to a certain extent. 'Like those the settlers had left, towns soon became a source of wealth and advancement for some, a source of work for others' (Arps, 2011, p. 2),<sup>2</sup> creating greater class distinctions and giving rise to suburban aspirations, both manifested from 'memories of the social and physical conditions' (Ferguson, 1994, p. 24) of the Old World. 'By the 1890s, with increased immigration and the concentration of settlement in developing towns where land was subdivided into ever smaller allotments, there was a perception that conditions in towns – particularly housing – were declining, and that for the first time there was a feeling slums were becoming a permanent feature of the new colony' (Arps, 2011, p. 2).<sup>3</sup> The rural vision's promise of 'quick material reward for new settlers' (Ferguson, 1994, p. 29) did not always live up to reality; nor did company prospectuses and allied advertising, which 'told many lies about the nature of the new country' (King, 2003, p. 172).

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1 Includes citations from (Ferguson, 1994, p. 24).

2 Includes citation from (Ferguson, 1994, p. 30).

3 Includes citations from (Ferguson, 1994, p. 34; Schrader, 2005, p. 17).

Like their English counterparts nearly a century earlier, during the late 1800s, as a result of the declining living conditions in the older parts of towns, changing economic structures, and the provision of greater transport networks, many of the more affluent town-dwellers began to move to the peripheries of towns where they could combine the symbols of the rural vision with town life (Ferguson, 1994, pp. 30, 31). Consequently, 'land dealers reworked the [rural vision's] images of nature and pioneer into a more ordered world of semi-rural bliss,' which continued to 'affirm the central features of the old vision, of family and separate home' (Ferguson, 1994, p. 34). As with the Australian colonial experience, immigrants were drawn to this suburban idea by both its root, as well as its promoted vision, for it expressed their social aspirations (Davison, 1995, p. 42). In the new settlements, even working-class families had the prospect of attaining this bourgeois suburban vision, which would later come to dominate housing policy in New Zealand (Ferguson, 1994, p. 60; McAloon, 2010).

### **The Workers' Dwelling Act, 1905**

The Workers' Dwelling Act was initiated by the Liberal Government in 1905, and was not only New Zealand's first venture into state housing for workers, but also a Western world first (Derby, 2010b). It came in response to the rising cost of living and the crowded slum environment it, albeit in part, had consequently created (Fill, 1984, p. 5). Following the adoption of a semi-rural lifestyle by the more affluent town-dwellers, land was purchased in the suburbs of the four main centres (Fill, 1984, p. 9), for it was here, 'where workers could grow their own produce and children could freely romp in expansive backyards,' that provided 'the best environment for New Zealand family life' (Schrader, 2003, p. 43).

'The Liberals were determined that the workers' dwellings would not be slums in the making' (Schrader, 2005, p. 26). 'To achieve this, each house was to be architecturally designed, well built and indistinguishable from comparable private homes' (Arps, 2011, p. 2).<sup>4</sup> The first workers' dwellings scheme, the Heretaunga Settlement, was completed in 1906 in Petone, Wellington (Fill, 1984, p. 12). Foreshadowing the scheme's later settlements in Auckland, Christchurch and Dunedin, it 'failed to prosper' (Schrader, 2003, p. 43), with only four applications received for the 25 houses advertised for lease (Schrader, 2005, p. 26). 'The Liberal's commitment to not recreating the slums, through the use of high quality materials paired with increasing labour costs, raised rental prices; while the settlement's location – far from workplaces and transport to the city – as well as its long fixed term leases, provided further disincentive and pushed the dwellings beyond the reach of most of those for whom they had been built' (Arps, 2011, p. 2).<sup>5</sup>

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4 Includes citation from (Schrader, 2005, p. 82).

5 Includes citation from (Schrader, 2003, p. 43).



**Figure 1.** Workers' Dwellings – part of the Liberal Government's 1906 Heretaunga Settlement, Petone, Wellington (Fill, 1984, p. 18).

Quoting *The Evening Post* (1906, p. 5), Arps (2011, p. 2) states that 'critics pounced on the settlement for its failure to provide for its intended demographic, its vacancies, as well as its designs, where with a notion of avoiding monotony [...] they are mixed up curiously [...] the studied order in disorder is hardly an improvement, they form a bizarre spectacle.' In reaction, the Liberals sanctioned weekly tenancies and the remaining houses were occupied by local workers (Schrader, 2005, p. 26). To the Act's detriment, the town's slums still remained (Arps, 2011, p. 3).

Schrader (2003, p. 43) comments that 'successive governments continued to tinker with the [Workers' Dwelling] programme, but it failed to spark. [...] It was not until the 1935 election of the first Labour Government that a new era of state housing began.'

### **Labour Government, 1935-49**

The 1935 Labour Government, 'challenged to address the slum problem [...] was determined to use all the resources of the state to ensure an improved standard of living for all its citizens, and not just workers' (Arps, 2011, p. 3).<sup>6</sup> Labour initiated what still is today, the largest housing construction scheme in New Zealand's history, and in doing so, 'stimulated industry – providing work for those left jobless after the Great Depression' (Schrader, 2003, p. 43); while also building what Ferguson (1994, p. 117) regards would come to 'symbolise the very heart of the New Zealand dream.'

'Labour promoted and entrenched the nuclear family and the detached suburban home in New Zealand society through its state housing programme' (Arps, 2011, p. 3). 'Politicians and reformers saw the suburb as free from moral pollution, and the family

<sup>6</sup> Includes citations from (Ferguson, 1994, p. 117; Schrader, 2005, p. 33).

home as more necessary than ever for the future of the country' (Ferguson, 1994, p. 60) following the First World War and the Great Depression. The design of Labour's state housing scheme reflected this vision, embraced the creation of community, and was influenced by the earlier Garden City movement, albeit reworked into a less radical notion of 'Garden Suburbs' (Ferguson, 1994, p. 60).



**Figure 2.** 12 Fife Lane, Miramar, Wellington – the Labour Government's first state house, completed in 1937. Author's own image.

## The Garden City Movement

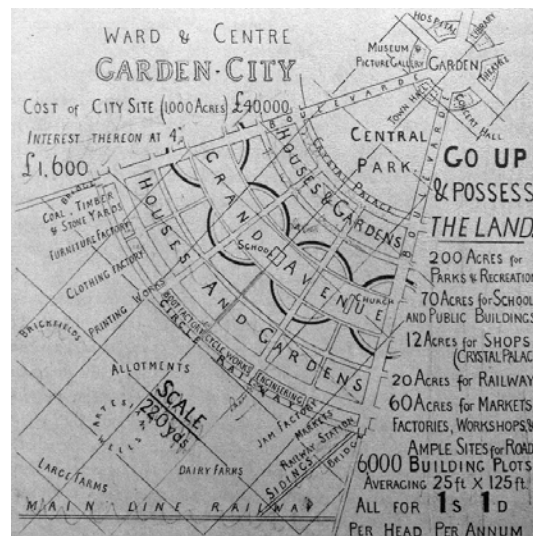
While 'the Garden City idea had its beginnings in the United States in the 1880s when some reformers challenged the notion of the private family home,' it was Englishman, Ebenezer Howard, who provided the 'most complete expression of its ideas,' and fellow countryman, Raymond Unwin, 'who gave them physical form with his designs for Garden Cities near London' (Ferguson, 1994, p. 75). 'Idealisation of life in the countryside' – already established as a promoted vision and certain aspiration of early European settlers of New Zealand, rooted in Old World social and physical structures – provided the mentality for Howard's proposed new kind of utopian town, 'located out in the countryside, where the root causes of the dirt, grime, and confusion of industrial metropolises could be addressed beforehand' (Rowe, 1991, pp. 234, 235). Through the deliberate juxtaposition of factories and homes in a semi-rural environment, Howard realised that the increasing separation between home and work, which was being reinforced by suburban development, could be broken down; while the loss of community and the health of those living in industrial cities could also be addressed (Ferguson, 1994, p. 75; Schrader, 2005, p. 168).



Schrader (2005, p. 168) explains that Howard's diagrammatic Garden City model is:

'divided into several residential wards and a civic ward. The focal point of each neighbourhood is a primary school, which also serves as a local community centre. Industry was located at the edge of the city, and commercial and civic activities near the core. At the epicentre is a garden reserve. A green belt encircling the city is both an agricultural hinterland and a barrier to growth.'

'Howard believed his model combined the best of town and country: big enough to create urban vitality, yet small enough to foster neighbourliness' (Schrader, 2005, p. 168).



**Figure 3.** Ward and Centre Garden City. Unpublished version of a diagram used in Howard's book *Garden Cities of To-morrow* (Ward, 2002, p. 27).

Howard's Garden City vision and Unwin's designs, with their village-like plans, parks and avenues, houses in gardens, and meandering streets that followed the natural contours of the land, were to influence generations of twentieth century urban designers (Rowe, 1991, p. 235; Schrader, 2005, p. 168). In 1928, Clarence Stein and Henry Wright designed the town of Radburn, New Jersey, which 'advanced the Garden City thinking by building an environment that minimised the impact of the motor car' (Schrader, 2005, p. 168). Although it 'never became a true Garden City in the sense that it was envisaged by Howard' (Schrader, 1993, p. 86), the design incorporated superblocks of housing that were arranged facing inner communal parkland, not the street, and were connected by small feeder lanes to arterial routes; while pedestrian walkways ran through the parkland to facilities such as schools and shops (Schrader, 2005, p. 168; Ward, 2002, p. 133). 'This arrangement was not just safer, proclaimed the designers; it would encourage face-to-face contact and facilitate the growth of community' (Schrader, 2005, p. 168).

The Radburn model was 'influential far beyond its immediate environs – even in the offices of New Zealand's Housing Division' (Schrader, 2005, p. 168), where its planning and principles are evident in their design of state housing developments such as Naenae, Lower Hutt – one of four case studies documented later in this thesis.

## Design & Criticism

The Labour Government 'envisaged no less than a whole new housing environment' (Ferguson, 1994, p. 137) with its Garden Suburb state housing scheme. To ensure it did not recreate the slum environments it was intending to rid, Labour, like the Liberals, utilised high quality materials and equally high standards of design and construction (Schrader, 2003, p. 44). Through housing the 'comparatively affluent with the relatively poor' (Schrader, 2003, p. 44), they also sought to create 'socially mixed communities' 'to avoid streets of people of uniform income' (Schrader, 2005, p. 37).

'With clear lineage to the foundations of the workers' dwelling scheme, [Labour] originally insisted that all houses be architecturally designed, sited on its own section, and that no two houses in a street would be exactly alike' (Arps, 2011, p. 3).<sup>7</sup> "Rows of identical housing would have been immediately unpopular," as would "huge barrack-like tenements of the Old World," proclaimed John A. Lee, Labour's Under-Secretary for Housing (As cited in Schrader, 1993, p. 66).

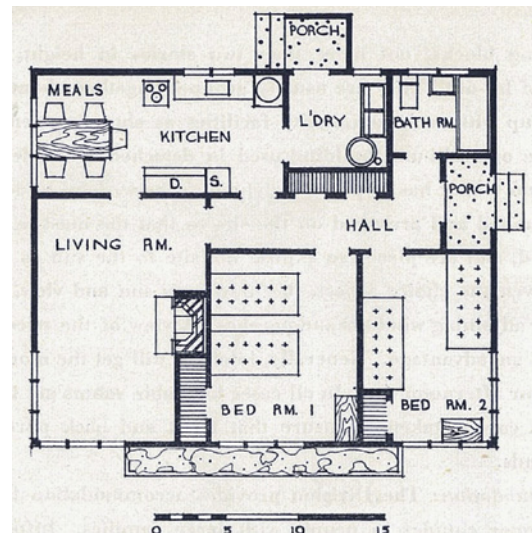
Of the initial 400 plans received by the Department of Housing Construction from architects around the country, 'almost all mimicked the English cottage style, characterised by gabled or hipped roofs with a small eaves overhang, and three-light casement windows' (Schrader, 2005, p. 89). It is interesting to note at this point that the design of state housing in New Zealand, with few exceptions, never employed the 'international' style of modern architectural language, which many contemporary public housing schemes in Europe and America had (Schrader, 2005, p. 90). 'The idiom was at the cutting edge of architecture, and was closely aligned with the political left and ideas of social progress and egalitarianism' – 'notions Labour embraced and promoted,' writes Schrader (2005, p. 90), who goes on to state that, 'it seems paradoxical that they bypassed this 'socialist style' in preference for one rooted in British feudalism.' Architectural historian, Peter Shaw (As cited in Schrader, 2005, p. 90), suggests the reason for this could be that 'Labour didn't want to frighten the electorate' given public support of the state housing scheme 'was not guaranteed.' He adds that, 'building in an idiom that was foreign to local experience risked alienating people [...] [while] erecting English-style cottages reassured a Pakeha population that still saw Britain as 'home'' (Schrader, 2005, p. 90).

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7 Includes citations from (Schrader, 2005, p. 88).



Some of the few modernist exceptions to the traditional state house style include large-scale, multi-unit dwellings such as the Dixon Street, McLean and Centennial flats in Wellington, as studied by Gatley (2000). While these examples never became emblematic of state housing as they were ‘out of kilter’ not only ‘with the suburban pattern of the rest of New Zealand,’ but also with the entrenched New Zealand dream; their experimental nature is comparable to some later examples, and like those, also ‘deteriorated into ghettos of poverty, crime and violence’ (Schrader, 2005, pp. 105, 106).

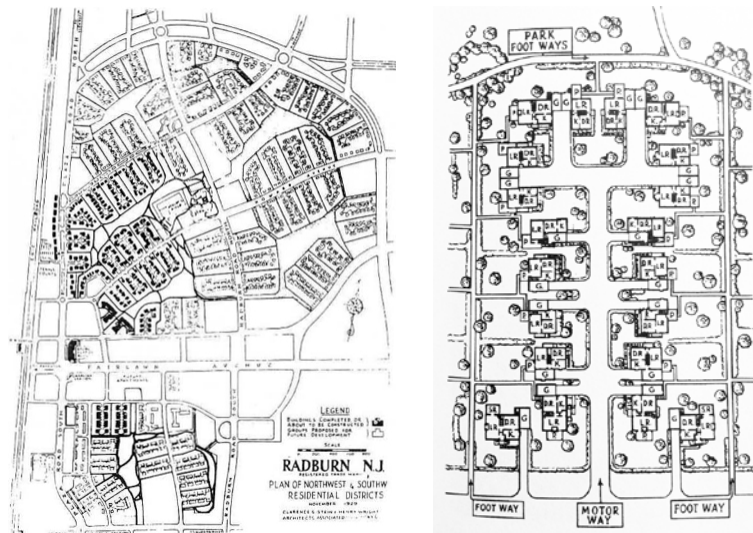


**Figure 4.** The modernist Dixon Street Flats, Wellington (Archives New Zealand, ABVF 7484, W4925/1 (1-17)). **Figure 5.** A quintessential, two-bedroom state house plan from the 1940s (Firth, 1949, p. 32).

In contrast to the workers’ dwellings and the long-standing convention that the living room should face the street, early Labour-initiated state house plans, in adherence with Garden City planning principles (See: Girling & Helphand, 1994, p. 60), were oriented so that their living areas would receive the sun throughout the day (Schrader, 2005, p. 92). The living room was to be the centre for family relaxation and social life, instead of the kitchen as it was with the workers’ dwellings (Schrader, 2005, p. 92). ‘This change was part of a drive [...] to make households more efficient and hygienic,’ which was reinforced by an ‘aesthetic of cleanliness,’ and a change in interior décor to ‘white – and variations thereof’ (Schrader, 2005, p. 92).

The planners of Labour’s Garden Suburb state housing scheme ‘experimented with road layouts’ (Ferguson, 1994, p. 137). ‘Curved streets and cul-de-sacs became standard features,’ while they also ‘showed concern for the comprehensive provision of services’ such as community buildings and shops (Ferguson, 1994, p. 137). ‘Networks of parks and reserves within residential areas’ and connections to commercial and industrial zones would also become commonplace (Ferguson, 1994, p. 146). Akin to Stein and Wright’s design for Radburn (See: Girling & Helphand, 1994, p. 61), front and dividing

fences of properties were eliminated to reveal the front garden, which, although ‘an expression of individual ideas’ also affording some privacy, ‘was not viewed from the cottage garden aspect alone, but as part of a large community garden’ (Firth, 1949, p. 13).

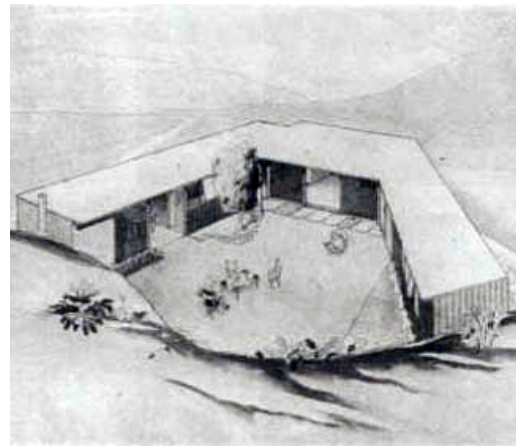


**Figure 6.** Plan of Radburn by Clarence Stein and Henry Wright (Birch, 1980, p. 429). **Figure 7.** Plan of a Radburn cul-de-sac – each section contributes to the privileged formal whole (Girling & Helphand, 1994, p. 61).

Even indirectly, ‘Labour’s housing policies meant a better life for many New Zealanders’ (Ferguson, 1994, p. 175); however, criticism of their scheme came nearly as quickly as the houses themselves were erected – although ‘there were certainly few complaints from tenants’ for whom ‘being allocated a state house, with flush toilets and electric stoves, was akin to winning the lottery’ (Schrader, 2003, p. 44).

Architects of the emerging generation such as Bill Wilson criticised the state house design for being ‘different for the sake of being different, bogus difference, difference without meaning’ (B. Wilson, 2005, p. 149); while the Architectural Group, of which Wilson was a founding member, also ‘condemned the (enclosed) English cottage style [...] as inappropriate for New Zealand’s indoor/outdoor lifestyle’ (Schrader, 2003, p. 44). Group member, Bill Toomath (As cited in Schrader, 2005, pp. 98, 99), later argued that while they are “handsome little houses in themselves, all very elegant, beautifully proportioned [and] fine little exemplars of small English houses,” they are “not New Zealand houses.” He suggested instead that the “Californian bungalow would have been a superior state house because its open planning and verandahs better suit local conditions” (As cited in Schrader, 2003, p. 44). However, ‘architects of the 1930s treated the ‘jerry built’ bungalow [much like the earlier villa (See: G. Wilson, 1950b, p. 97)] with disdain, seeing the English cottage – with its perceived attributes of quality and good taste – as the best way to raise housing standards’ (Schrader, 2003, p. 44). Subsequently, Skinner (2000, p. 159) suggests that the ‘First House’ of the Architectural

Group, as well as the 'Demonstration House' by the Architectural Centre, can be partly seen as a reaction to the state house standard.



**Figure 8.** The Architectural Group's 'First House,' Takapuna, Auckland (Fairburn, 1950, p. 156). **Figure 9.** The Architectural Centre's 'Demonstration House,' Karori, Wellington (The Architectural Centre, 1948, p. 8).

### National Government, 1949-57

In 1949, the Labour Government, supposedly 'bereft of new ideas,' were succeeded by National, who, while pledging to 'continue the state housing programme' (Schrader, 2005, p. 43), rejected it as a 'mainstream form of tenure,' instead emphasising 'home-ownership as a worthy end in itself, and the pre-eminent aspiration of all New Zealanders' (Ferguson, 1994, p. 177).

Shortly after their election, National began to sell off the existing state housing stock to tenants. While the scheme was initially successful, its later performance was sluggish; Schrader (2005, p. 49) argues that this could be because the pitch of their 1951 booklet, *The Advantages of Home Ownership*, was wrong:

'Domestic bliss it might be, [...] [but] its depiction of home-owning life mirrors state house life: mum, dad, kids, house and garden. What is missing is something to encourage dreaming: a new bedroom, a garage, French doors opening to a sun-drenched patio. There is nothing to suggest how tenant's lives might be transformed by becoming home-owners.' 'The supporting text [...] also fails to capture the imagination,' he adds.

While National's promotional material may have failed to provide a vision, state tenants evidently had their own aspirations. As tenants became homeowners under the scheme, redevelopments resulted. These redevelopments contribute to the importance of this period in the history of state housing in New Zealand, and are of significance to this thesis. While these improvements can be seen to be expressions of residents' desires, as

well as certain responses to the shortcomings and criticisms of state house design, they are commonly bound by their influence from private-sector housing in New Zealand and its international precedents.

### **Private-Sector Housing in New Zealand – The First 100 Years**

Private-sector housing in New Zealand has a strong history preceding, and running parallel to, the design and construction of state housing. Similarly concerned with the New Zealand dream, private-sector housing has competed with, influenced, and been influenced by, state housing – which was formerly the ‘benchmark against which other housing was judged’ (Schrader, 2005, p. 102).

Since the early European settlement of New Zealand there have been a number of architectural typologies introduced and established, care of both the architect and the speculative or local builder. The cottages of early pioneers were predominately built of stone, adobe, or rammed earth to forms similar to those of the houses they had left in England; it was later that their designs would be influenced by the social and climatic conditions of the new country (G. Wilson, 1949, Unpaginated). The later development of the cottage was influenced by a number of architectural styles including Classical, Georgian and Gothic, which were translated into timber – the primary building material due to its abundance in the new colony (Shaw, 1991, pp. 38, 39; G. Wilson, 1949, Unpaginated). The development of the cottage also saw an increase in its size and decoration, as well as the incorporation of verandahs (Shaw, 1991, pp. 38, 39; G. Wilson, 1949, Unpaginated), which responded to the ‘comparatively mild and wet climate with clear sunshine,’ and would become a ‘marked characteristic of all New Zealand houses’ (G. Wilson, 1949, Unpaginated). ‘Catalogues illustrating plans and detailed drawings of a vast array of mass-produced doors, windows, ornamental balusters, bargeboards and mouldings’ would also emerge in this period and exert significant influence on housing for years to come, much like the later plan books of design-build companies such as Lockwood Homes and Neil Housing (Shaw, 1991, pp. 38, 162).

By the last quarter of the 19th century, ‘successful European settlers were no longer satisfied with a cramped life inside small, four-roomed, passageless houses’ (Shaw, 1991, p. 45). The cottage had been elaborated, but settlers still wanted more space (Shaw, 1991, p. 45). Consequently, architects and builders began to think of ways to satisfy clients’ needs, which culminated in the establishment of the bay villa (Shaw, 1991, p. 45) – ‘an undeniable American influence on New Zealand architecture,’ ‘quite different from anything found in Britain’ (Schrader, 1993, p. 85). Its design continued the incorporation of the ‘obligatory’ verandah, while its central hall gave access to ‘more generously proportioned rooms,’ which ‘caught the imagination of home owners’ (Shaw, 1991, p. 45). As a result, ‘examples sprung up all over New Zealand’ (Shaw, 1991, p. 45).



The Californian bungalow, another American example as its name suggests, was the next design to significantly influence housing in New Zealand. 'Some have explained [it] as a rejection of the past villa and cottage design, and as evidence of a domestic style [...] [expressing] the aspirations of the ordinary New Zealander' (Ferguson, 1994, p. 89). Fittingly, as previously mentioned, it could have been a more appropriate state house design given the climate and lifestyle of the country. Originally implemented as hybrid transitional designs, early Californian bungalows featured low-pitched roof angles with broad overhanging eaves, verandahs, large windows, and simplified decoration characteristic of the style, but were traditional villas in plan (Rowe, 1991, p. 68; Shaw, 1991, p. 47; G. Wilson, 1950b, p. 97). Following the First World War they would be designed and built distinctively open-plan, and became popular with speculative builders and the public alike (G. Wilson, 1950b, p. 97), as they were 'sunnier, warmer and cheaper to build than the villa' (Derby, 2010a).



**Figure 10.** A typical single-bay villa (Shaw, 1991, p. 46). **Figure 11.** A characteristic bungalow, quite refined by comparison, but of similar basic elements - siting, landscape, verandah, and formal street appearance (Shaw, 1991, p. 98).

The modernist houses that would follow the Californian bungalow could similarly have been appropriate state house designs, but were far more radical, as aforementioned. While these houses varied significantly in design, their functionalist open-planning and indoor/outdoor relationships extended to their landscape setting, are examples of their commonalities that responded to developing social customs, and can be seen to have influenced the redevelopment of some state houses (Rowe, 1991, p. 93; Shaw, 1991, pp. 155, 156; G. Wilson, 1950a, p. 14).

While this chapter has already identified that the 'jerry built' villa and bungalow were treated with disdain by architects (Schrader, 2003, p. 44; G. Wilson, 1950b, p. 97), and that modernism risked alienating the nation (Schrader, 2005, p. 90); in light of earlier criticisms, it remains surprising that given this lineage of successive development in response to New Zealand's conditions and way of life, that the design of state housing

did not respond more appropriately until arguably the last quarter of the 20th century. It is also surprising that 'private builders [once] had to copy [state house designs] to compete' (Schrader, 2005, p. 102). Indeed, so popular were their original designs, 'after a while it became impossible to tell a private house from a state house [...] since nearly all had the distinctive state house style' (Schrader, 2005, p. 102).

## Design & Criticism Continued

'[National's] state housing scheme, like that of the Liberal and Labour Governments before it, was defined by escalating land and building costs' (Arps, 2011, p. 3).<sup>8</sup> 'This [economic] position challenged National to develop state house designs adopted from Labour, increase their density, utilise cheaper materials, and produce new models' (Arps, 2011, p. 3).<sup>9</sup>

National's actions were also in part informed by concerns 'about the economic and social benefits of unbridled suburban expansion, or sprawl' (Schrader, 2005, p. 109). These concerns related to the 'escalating cost of providing services to an ever-expanding suburban frontier,' and New Zealand's ability to 'continue to feed itself, let alone export surpluses, if suburbia's appetite for fertile farmland remained insatiable' (Schrader, 2005, p. 109). In 1955, Geography professor, Kenneth Cumberland, represented the feelings of many when he decried proposals which continued what he regarded was 'the cult of the quarter-acre,' which would 'condemn rich market gardens and smiling dairy lands and replace them with more treeless deserts of tiles – inadequately roaded, sewered and lighted and unprovided with community services' (As cited in Schrader, 2005, p. 109). Cumberland's colleague, Architecture professor, Charles Light, had also earlier spoken out on the monotony of state housing suburbs in which he thought 'too much emphasis had been placed on variation [...] creating a restless and confused picture lacking in overall composition or unity' (As cited in Schrader, 2005, p. 110). Cumberland and Light recommended 'less variation in state house design, higher dwelling densities and better site planning' (Schrader, 2005, p. 118). Unfortunately the results were less than desirable.

The multi-unit 'Duplexes' and 'Star Flats' that emerged in the late 1950s were described as 'innovative, but the resulting streetscapes were much less so' (Schrader, 2003, p. 44). Like the earlier modernist flats, public expectations of these new experimental models were not met as 'generations [of] New Zealanders had been told that the ideal home was a single-unit dwelling on its own quarter-acre section' (Schrader, 2005, p. 117). Critics like the New Zealand Institute of Architects (1972, p. 1) described them as an 'inescapable emptiness and monotony of appearance,' while Schrader (2003, p. 44) writes of their 'homogenising environment' of 'near-identical boxes, housing near-identical people, living near-identical lives,' which soon 'became infamous, often

8 Includes citation from (Schrader, 2003, p. 44).

9 Includes citation from (Schrader, 2003, p. 44).

unfairly, as hotbeds of crime and other anti-social behaviour.' Schrader (2003, p. 44) goes on to highlight the views of other critics who 'charged National with creating the very slums the Liberals and Labour so wanted to avoid.'



**Figure 12.** A 'Star Flat' – based on a similar Italian design (Archives New Zealand, AAQT 6401, A52084). **Figure 13.** A street of 'Duplexes,' Mt Wellington, Auckland. Their criticisms are all too evident (Archives New Zealand, AALF, W3300, Box 9).

In spite of this, 'to meet an unceasing demand,' National continued the development of large-scale housing projects including Porirua, and began planning others in South Auckland (Schrader, 2005, p. 109), such as Otara – the design case study area of this thesis. Although these suburbs were initially planned 'according to the conventions of the Garden Suburb,' National would later 'abandon the provision of comprehensively planned suburbs with services such as shops and health clinics' – clearly downplaying Cumberland's earlier criticism, as well as the findings of the 1954 *Mazengarb Report on Moral Delinquency in Children and Adolescents*, which 'found a lack of community spirit in state housing areas [could be] blamed in part on the lack of community facilities' (Ferguson, 1994, pp. 181, 201). 'Bewildered state tenants were left to sink or swim' (Schrader, 2003, p. 44).

### Late 1960s – Today

'Once representing the New Zealand dream, perceptions of state housing have altered significantly since its inception' (Arps, 2011, p. 4). By the 1970s, suburbs and state houses that were formerly considered the 'most desirable place to live,' demonstrating 'society's victory over the problem of inner-city slum housing,' came to be seen as 'ghettos or slums' (Schrader, 2005, p. 211), and as 'dull,' 'bland' (Ferguson, 1994, p. 203), 'boring and depressing places to live' (Derby, 2010b). Schrader (2005, p. 211) suggests that this is closer to how the New Zealand public views state housing today than how it saw it in the late 1930s. Additionally, Ferguson (1994, p. 181) explains that the lack of interest in the surrounding suburban environment shown by the government

supported a growing attitude amongst New Zealanders that state housing had become undesirable, and was to be reserved for society's 'misfits' and 'losers.' This change in attitude also came as there was a shift in the priority social groups intended to benefit from the scheme, as 'governments began to bow to pressure to open up access to housing resources and distribute them on the basis of need' (Ferguson, 1994, p. 9).

Due to their unpopularity, the National Government's 1971 *Royal Commission of Inquiry into Housing*, recommended that 'large-scale state housing developments should cease' (Schrader, 2003, p. 44), that 'future medium-density housing be more imaginative in design and layout,' and that 'more single-unit houses be constructed' (Schrader, 2005, p. 121). 'The Commissioner's report was intended to motivate the government to ditch its somnolent approach to state housing design and fashion a more lively vision' (Schrader, 2005, p. 121). With the re-election of Labour in the following year, the report would signify 'the end of the distinctive state house style' (Schrader, 2005, p. 121).

Throughout the 1970s cluster housing concepts were developed which 'assumed that community identity arose from the way in which houses and local services were grouped in relation to each other' (Ferguson, 1994, p. 202). Comparatively smaller in scale, medium-density, and 'each to a distinctive and attractive design,' these cluster housing concepts were praised by the media and contrasted the 'dreary, uniform dwellings of the past' (Schrader, 2005, p. 123) while they also proved difficult to distinguish as state houses.

Greater emphasis was also given to the incorporation of private housing within state developments during this period to 'achieve balanced communities and avoid some of the social problems of the past' (Schrader, 2005, p. 121). Similarly, the government would also buy into private developments rather than developing its own subdivisions (Schrader, 2005, p. 123).

While the construction of new state houses has reduced significantly of late, there has also been a developing trend of utilising the services of private architects since the disestablishment of government architect roles (Schrader, 2005, p. 125). An example of this is the novel Rata Vine development located in Wiri, South Auckland, parts of which were designed by Manning Mitchell Architects and Rewi Thompson in the mid-1980s. Although Thompson's scheme has since been removed by HNZC because it facilitated an internalised and undesirable environment, Manning Mitchell's scheme continues successfully and has developed a neighbourhood charm (Arps, 2011, p. 9).<sup>10</sup>

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10 Includes citation from (Barrie, 2009, p. 2).





**Figure 14.** Manning Mitchell Architects' Rata Vine Drive. The eccentric pastel colour schemes are no longer (Honey, 1989, p. 35). **Figure 15.** Rewi Thompson's Laurelia Place, which has since been removed from the site (Honey, 1989, p. 38).

In 1986, the Labour Government's Minister of Housing, Phil Goff, gave belated recognition to Cumberland's argument that 'well-serviced older suburbs were now under-occupied' (Schrader, 2005, p. 125), with the announcement of a new policy of infill housing. New state houses were constructed on subdivided sections behind existing ones, as the quarter-acre section had become a "burden instead of an asset for many people," proclaimed Goff (As cited in Schrader, 2005, p. 125). Despite assurances of care in their design and construction, the resulting houses would later be labelled 'austere,' 'flimsy, and cheap' (Schrader, 2005, p. 125). Similar policies of consolidation in Australia, Davison (1995, p. 41) writes, 'strike hard at attitudes deeply ingrained by historical experience. They compel citizens to make unfamiliar decisions between the good life and the physical forms in which it has traditionally been clothed.' However, state tenants had little choice in the matter.

With the re-election of Labour in 1999, 'there was a renewed commitment to 'raising the bar' in state housing' (Schrader, 2005, p. 126). With an ageing housing stock, modernisation schemes were implemented which included installing new kitchens, bathrooms and insulation, as well as extending houses to accommodate larger families (Schrader, 2005, p. 127). Schrader (2005, p. 127) expresses that a backlog in this work means that there are long queues and HNZA (2010) acknowledges that it only affects selected state houses.

Design guidelines were also initiated under the same Labour Government which 'set minimum standards of design and construction for state housing' (Schrader, 2003, p. 44). The guidelines were influenced by contemporary housing and urban design practice and principles, in much the same manner that post-war suburban state housing was influenced by the Garden City movement. This includes references to international city council development guides, *Responsive Environments* (Bentley, Alcock, Murrain, McGlynn, & Smith, 1985) and *New American Urbanism*<sup>11</sup> (Dutton, 2000).

11 Fittingly, New Urbanism itself is a certain legacy of the Garden City movement (Rees, 2003, p. 103).

These design guidelines can be seen to have influenced recent redevelopment projects such as HNZC's Auckland showpiece, Talbot Park – one of four state redevelopment examples documented later in this thesis. This redevelopment project was one of six initiated nationally as part of an evaluation of HNZC's Community Renewal initiative. The aim of this initiative was to 'address social exclusion; foster strong, sustainable communities; and promote change in the economic, social and physical environment in selected areas [...] [which] have a high deprivation index ranking and a high concentration of HNZC properties' (Housing New Zealand Corporation, 2009). Although the other redevelopment projects were not as extensive as that of Talbot Park, all involved a partnership between HNZC, people living and working in the areas, local councils and other agencies.



**Figure 16.** Part of the Talbot Park Community Renewal project that replaced earlier duplexes with a variety of housing types. Author's own image.

## History of State Housing in New Zealand Summary

The history of state housing in New Zealand reveals that for all of the success of the scheme, there were also many failures and criticisms (Arps, 2011, p. 3). While recent HNZN initiatives have attempted to improve the living environments of some state tenants, these isolated interventions have done little to relieve greater problems, including the certain demise of state housing in New Zealand, which, justly or not, has resulted in an infamous perception and some less than desirable environments. Admittedly, this problem goes further than physical design; however, their urban and architectural environment can be seen as a significant contributing factor. Consequently, it is these areas with which this thesis is concerned and endeavours to improve.

To reiterate, urban and architectural issues that have contributed to the demise of state housing in New Zealand include the following:

- The experimental nature and poor execution of some designs.
- The abandonment of comprehensively planned suburbs.
- The architectural typologies of some dwellings that were contrary to public expectations.
- The barren and monotonous streetscapes and sections of some suburbs.
- The shallow, near-meaningless variety of housing designs.
- The sprawl of suburbs under 'the cult of the quarter-acre' (Schrader, 2005, p. 109).
- The designs' engagement with New Zealand's environmental conditions and lifestyle.

Additionally, as aforementioned, HNZN has identified other problems that state housing faces that have urban and architectural implications. These include shifting housing demands, as well as the high current demand and predicted increasing future need for accommodation for lower socio-economic groups.

The next chapter of this thesis extends the findings of this chapter through examination of the design, evolution, and redevelopment of four post-war suburban state housing areas.



## **Chapter Three – Section One**

### ***Post-War Suburban State Housing Case Studies***

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## Foreword

This chapter documents and studies the results of fieldwork undertaken in four post-war suburban state housing areas. Following a description of the method used in the fieldwork, the chapter provides a brief overview of the areas and their original designs, while also locating them in the history of the greater state housing programme. This chapter then analyses and compares their evolution and redevelopment, both private and state-initiated. An illustrated history of each area is also provided.

## Method

As previously mentioned, fieldwork was undertaken in four post-war suburban state housing areas – Naenae and Epuni in Lower Hutt, as well as Point England and Glen Innes in East Auckland. Two different regions were investigated to provide a defensible survey that overcame certain local trends that were anticipated, and observed. The fieldwork was also an important immersion in the environs with which this thesis is concerned.

Informed by the work of Schwalbach (2009) and Chow (2002), the method used in the fieldwork involved mapping the evolved structure of each of these areas at a suburban level. These analytical maps, documented later in this chapter, have a 500m radius and are centred on the middle of each cross-section surveyed. The maps serve to illustrate street networks; residential, retail, commercial, and industrial zones; as well as the location of reserves and educational, recreational, and community facilities.

Of the four state housing areas surveyed, a sub-area of each was examined in-depth. Within each region, one of the sub-areas had a higher percentage of properties with a sales history, i.e. privatised properties.<sup>12</sup> To reiterate, the reason for investigating privatised state houses, and areas where private ownership was high, was that it was anticipated they would exemplify redevelopments that could be of significance to state housing generally. While the four sub-areas were sufficiently different from one another to each make a valuable contribution to the research, it should be noted that the difference between state and private ownership in these sub-areas was not as significant as originally anticipated. This was because many areas, including those investigated as potential case studies, were of mixed ownership, lacking, to a certain extent, any noticeable presence of private or state-owned enclaves. This is interesting because it demonstrates the realisation of HNZA's objective to improve social outcomes through the provision of mixed-tenure housing. Ownership maps of each sub-area are provided later in this chapter.

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12 Due to difficulties in obtaining property ownership records for such large and remote areas, the database of property report and valuation company, QV, was used to distinguish houses with a sales history. It was assumed that properties with a sales history had been passed from state ownership into private ownership. This information was cross-referenced with HNZA's *New Zealand State Housing Dataset 1936-2010*, which lists state houses, current, sold or demolished, in 'meshblock' geographical areas corresponding to Statistics New Zealand's census areas. While there were gaps and inaccuracies in this method, for the purposes of this research it was sufficient and predominately appeared accurate.

Through each sub-area, a cross-section was used as a sampling device. Each cross-section contained thirty state houses of varying ownership status, and a range of suburban environments, including arterial roads, cul-de-sacs, alleyways, and public reserves. The peripheries of each cross-section were also observed, and their relationships and contributions to the environments are documented. While the cross-sections were initially a linear sample of each sub-area, deviations were made so that a number of different dwelling orientations and suburban environments could be observed. Such deviations were made prior to knowledge of the ownership structure of these sub-areas, so they remain a true sample. The methods used in this fieldwork included mapping, photography, sketching, and notation. The observations recorded were influenced by the work of Schwalbach (2009), CABE (2000), and McIndoe, McDonald & van-Boheman (1995).

The survey of state houses in each cross-section included examining their property area, site coverage, relationship to adjacent properties, and their relationship to the street. Obvious redevelopments such as dwelling additions or alterations were also described, sketched, and identified on a site plan or aerial photograph of each property, which also illustrated their boundary conditions and major landscape features. An exemplar of the survey used in this fieldwork is documented later in this chapter, and pie charts documenting the collated primary fieldwork data are appended.

Due to the approach used in the housing fieldwork, there were certain limitations and a bias towards the external street appearance of the surveyed properties. This was mitigated with the use of an accompanying plan or aerial photograph of each site, as aforementioned. It was further overcome by the empirical fieldwork identifying properties that have had obvious redevelopments, which could be examined in greater detail. The building permit records of a number of these redeveloped properties were requested from their respective councils, and those acquired are examined in the next chapter, along with contemporary state-initiated redevelopment examples.

At a larger scale, the survey of suburban environments in each cross-section included examining their plot structure, relationship to dwellings, public amenities, as well as landscape and streetscape features. These observations were described, mapped, sketched in section, and photographed. An exemplar of this survey is also provided later in this chapter.

Finally, the fieldwork surveys were collated and analysed, and the results are presented as three separate comparisons. The first two comparisons relate to the properties of each cross-section surveyed. These comparisons are structured as different perspectives on various topics, including common redevelopments, boundary conditions, and subdivision. The third comparison relates to the suburban environments of each cross-section surveyed.



The three comparisons are:

*A. Properties – Contemporary Conditions & Redevelopments*

- Specifically looking at the current conditions and changes that have occurred to the properties surveyed generally.

*B. Properties – Private versus State*

- Specifically looking at the current conditions and changes that have occurred to the properties surveyed, with regards to ownership.

*C. Suburban Environments – Contemporary Conditions & Redevelopments*

- Specifically looking at the current conditions and changes that have occurred to the suburban environments surveyed.

The three comparisons yield information about the original establishment of each sub-area, as well as their evolution and redevelopment. Regional and local differences are also identified, as are those between private and state-owned properties. The significance of these analyses is the way that the findings can be interpreted in terms of design issues and responses. These consequently inform the later development of design strategies for the regeneration of post-war suburban state housing, as well as the design case study itself.

## Post-war Suburban State Housing Case Studies

### *Naenae & Epuni, Lower Hutt*

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#### Overview

Expanding the suburban frontier, while replacing fertile agricultural and market-garden land (Derby, 2010), the large-scale construction of neighbouring state housing suburbs Naenae, Epuni, and Taita in the mid-1940s was promoted as the opportunity to build “an ideal Garden City in the Hutt Valley,” by the Director of Housing Construction, George Albertson (As cited in Schrader, 2005, p. 170). As an ‘apogee of environmental design’ (Ferguson, 1994, p. 146), influenced by Stein and Wright’s plan for Radburn, these Garden Suburbs featured ‘rambling streets, ample reserves, an industrial zone, and green corridors along which children could walk to school away from motorised traffic. Front fences were also banned to create the effect of a sweeping community garden’ (Schrader, 2005, p. 170). Together these features were anticipated to reduce any feelings of monotony, and bode well for (nuclear) family and community life (Ferguson, 1994, p. 148; Schrader, 2005, p. 169; 2010a), but were nevertheless of an experimental nature.

Under the modernist authority of émigré architect, Ernst Plischke, the Housing Division’s chief town planning designer, a community centre was planned as the focal point of Naenae, while similar smaller centres would support the neighbouring suburbs (Schrader, 2005, pp. 170, 172). ‘Incorporating commercial, social and cultural activities,’ Plischke’s design for the Naenae community centre was ‘based on Venice’s social nexus, San Marco Square. [...] [He] hoped his scheme would become an equally buzzy and vibrant living space’ (Schrader, 2005, p. 171). However, ‘after the Second World War the urgency of the housing shortage meant that nearly all development funding went into building houses, and little attention was paid to supplying the new housing estates with community facilities or public transport’ (Derby, 2010). When the ‘community centre was finally opened in 1954, [having been altered by Plischke’s superior, Government Architect, Gordon Wilson (Bowman, 2008, p. 141)], it was a glorified hall that never became the centre of community life’ (Schrader, 2005, p. 175). In addition, supplementary local shops, which were planned to be zoned throughout the area so that housewives would have to walk no more than a hundred yards for their daily purchases, were only executed to a limited extent – primarily in the form of consumers’ co-operatives, before they were succeeded by private enterprise (Ferguson, 1994, p. 146; Maclean, 2009).

Although a strong sense of community was evidently forged in Naenae, it did not evolve as its planners had intended (Schrader, 2005, pp. 175, 176). With non-existent footpaths, unpaved streets, and unfenced front gardens that were unsafe for children and devoid of trees, plants, and lawns, many people were brought together through common adversity resulting from the conditions of their new suburban environment; while with the nuclear family as the main social unit, people preferred to socialise with

their neighbours or at home – they embraced the concept of community concerned with their street, but resisted that of the wider milieu (Schrader, 2005, pp. 100, 180; 2010a). By contrast, Plischke’s vision was a ‘highly European and urbanised model of community that was largely foreign to New Zealand’s suburban culture and experience’ (Schrader, 2005, p. 176).

‘Today the suburb of Naenae houses a population who are some of the most deprived in the country and the centre reflects the associated social and economic problems’ (Bowman, 2008, p. 141). Despite this, it was evident from the case study fieldwork that a sense of community still exists in both Naenae and Epuni, even with their strong social and cultural diversification. Each of the areas featured places that were obviously vested with pride and community spirit, an example of which is Naenae’s Boxing Academy that supports local youth and incorporates public art depicting famous boxers at its street edge. However, both suburbs also featured spaces that make a far less valuable contribution to their surrounding environment – their green corridors are a significant example. These spaces appeared seldom used and unkempt, while similar national examples demonstrate that their enclosed nature makes them unsafe (Pollock, 2010). Vandalism and graffiti was also noted during the fieldwork and contribute to the perception that these public spaces appear to be poor remnants of earlier planning, and are now almost contradictory to their design intent of providing a safe environment for children. Similar problems in Naenae’s suburban centre have resulted in ‘an overall poor image and a perceived lack of ownership by the community’ (Bowman, 2008, p. 143), which the Hutt City Council has begun to address through urban design interventions aligning with their *Naenae Community Development Plan* (See: Hutt City Council, 2009).

## Statistics

Statistics obtained from Statistics New Zealand’s 2006 *Census of Population and Dwellings*.

### **Naenae North**

*Population* – 4,746

*Dwellings* – 1,599

*Housing* – 38.4% of homes are privately owned, with or without a mortgage, compared with 54.5% for the entire Wellington region.

*Average Household Size* – 2.9 people, compared with 2.6 for the entire Wellington Region.

*Unemployment Rate* – 8.9%, compared with 5.2% for the entire Wellington Region.

*Income* – Median income is \$19,700, compared with \$28,000 for the entire Wellington Region.

### **Epuni West**

*Population* – 3,090

*Dwellings* – 1,191

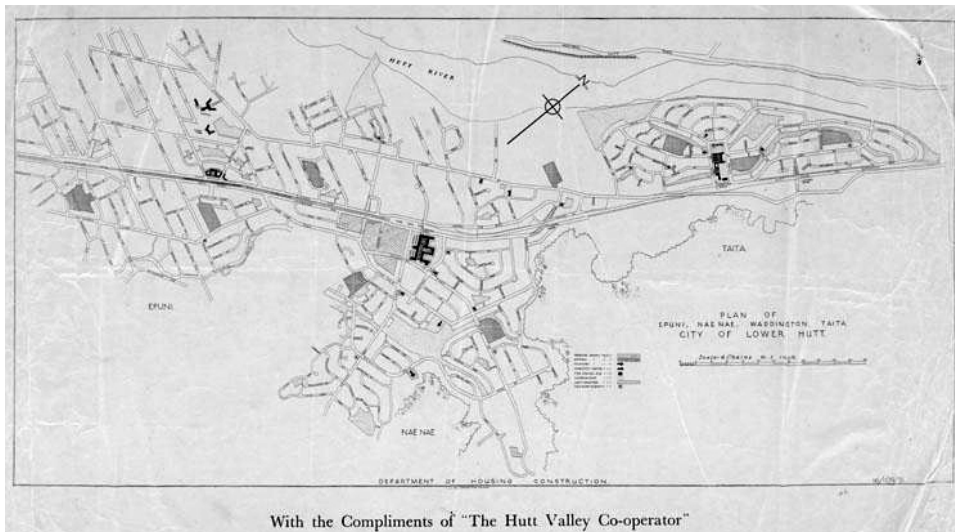
*Housing* – 48.4% of homes are privately owned, with or without a mortgage, compared with 54.5% for the entire Wellington region.

*Average Household Size* – 2.5 people, compared with 2.6 for the entire Wellington Region.

*Unemployment Rate* – 5.3%, compared with 5.2% for the entire Wellington Region.

*Income* – Median income is \$25,400, compared with \$28,000 for the entire Wellington Region.

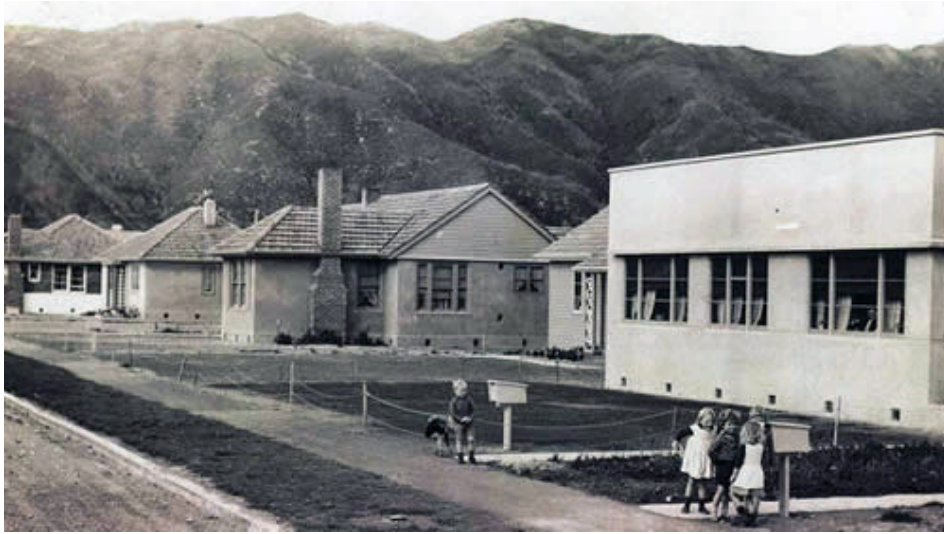
## Illustrated History



**Figure 17.** Department of Housing Construction's Plan of Epuni, Naenae, and Taita. The large building footprint at the centre of plan indicates Plischke's unrealised Naenae Community Centre. Note also the numerous parks, schools, and green corridors, which are shaded on the plan (Upper Hutt City Library Community Archive - P7-33-2368).



**Figure 18.** A perspective view of a version of Plischke's unrealised Naenae Community Centre. Its large scale and modernist aesthetic is most striking and reflects the ambitions of the development (Archives New Zealand - NASH 1535 0466 0520 2912).



**Figure 19.** Jutland Street, Naenae (Waterloo), circa 1945. Interestingly, one of the state houses is modernist in style, contrasting the neighbouring English cottage designs. Note also the unpaved streets and the cordoned front section which suggests grass had recently been sown (Archives New Zealand - AALF 6112 Box 1 15/2/7).



**Figure 20.** Quintessential nuclear family state house life – the Holmes family outside their Naenae property in 1945 (Alexander Turnbull Library - Eph-A-HOUSING-1951-01-recto).

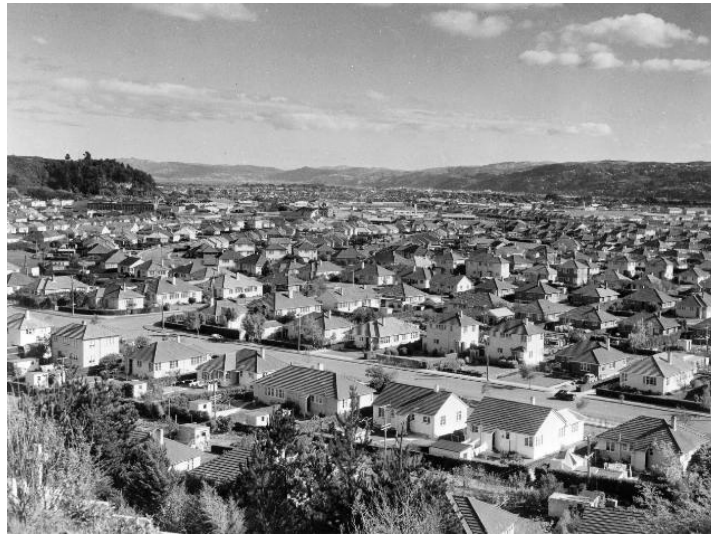




**Figure 21.** Consumers' Co-operative store, Seddon Street, Naenae. Local residents held shares in the society that was very successful but was later succeeded by private retailers (Archives New Zealand - AALF 6112/2).



**Figure 22.** Hillary Court opened in 1954 and was New Zealand's first pedestrian shopping mall. It occupies the site of Plischke's unrealised community centre and is consequently the focal point of Naenae (Hutt City Libraries, Heritage Centre Collection).



**Figure 23.** A 1960 photograph of Naenae from Taita Cemetery. The Naenae case study area is in the mid-ground to the right, and the suburban centre in the centre beyond. The most obvious developments include fencing and landscaping (Alexander Turnbull Library - PAColl-6303-08).



**Figure 24.** Contemporary photograph of Hillary Court following recent urban design intervention. A community library is located at the far end while other community and recreational facilities, including an Olympic swimming pool, are located nearby. Authour's own image.



**Figures 25/26.** Contemporary views of Naenae and Epuni. An interesting original feature of Naenae is that the telephone poles were located at the rear of sections resulting in a much tidier streetscape. Author's own images.







**Figures 27/28.** Contemporary views of public inner-block reserves (green corridors) within Naenae and Epuni. Underutilised, unstructured, and unsafe, they can be seen to be poor remnants of earlier planning. Author's own images.



## Post-war Suburban State Housing Case Studies

### *Point England & Glen Innes, East Auckland*

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#### Overview

The design and construction of the Tamaki state housing scheme spanned a twenty year period from the early 1940s, and encompassed the development of neighbouring suburbs Point England, Glen Innes, and Northern Panmure. 'It was the most ambitious Department of Housing Construction scheme to date,' and was designed to 'accommodate 30,000 people,' three times that of Naenae, making it 'effectively a new township' (Bowron, 2008, p. 44). Consequently, 'debate raged in the press before approval was eventually given' (Bowron, 2008, p. 44). The area is also cited as one of the final suburban developments before Auckland extended its metropolis and established its now 'legendary' pattern of urban sprawl (Boyce, 2010, p. 108).

Designed and built in two stages – stage one designed by Reginald Hammond during 1940-44, constructed in 1946; stage two designed by Ernst Plischke in 1944, constructed from the early 1950s – Bowron (2008, p. 44) explains that the Tamaki scheme 'illustrates changing ideas about town planning. At the southern end is Hammond's perfectly resolved Garden City-type plan of concentric crescents. At the northern end, a series of feeder roads provides access to cul-de-sacs, many of which open onto parks.' He adds that Plischke's design for the northern end, which included 'the large shopping complex and community centre,' 'appears to have been based on the American precedents of Radburn and the greenbelt towns, and included an extensive reserve system to provide 'extra airspace' and walkways through the block' (Bowron, 2008, p. 44). As with Naenae, 'while the street layout followed Plischke's design, the buildings did not' (Bowron, 2008, p. 44). This was partially because, as identified in the previous chapter, during the period in which construction began, 'the government had become conscious of urban sprawl,' and the area subsequently 'became a testing ground for new building types, including imported houses, multi-units, duplexes, and housing for single people' (Bowron, 2008, p. 44).

Talbot Park, a large superblock in Point England, is a significant example of the experimental nature of state housing in the post-war era. Akin to the development of Naenae and Epuni, and other state housing suburbs of the period, those involved with its design desired to 'generate visual interest and relieve monotony' (Schrader, 2005, p. 112). This was to be achieved through mixing novel 'star flats with multi-units and duplexes to provide both horizontal and vertical elements,' while a 'central green was also provided as a play area for children and a space for communal activities that would facilitate neighbourliness' (Schrader, 2005, p. 112). However, Schrader (2005, p. 112) states that 'some were unhappy with the new approach,' and it drew a number of criticisms, as identified in the preceding chapter.

While a sense of community evolved in the Tamaki area, it was not always of a positive nature, nor sustained with successive residents. Schrader (2005, pp. 195, 196) comments that 'the new arrivals didn't integrate into the community and a 'them and us' mentality developed,' which 'also had a physical impact' as the 'new people did not have the same respect for the houses as the original tenants.' Additionally, antisocial gang activity occurred in the area (Schrader, 2005, p. 219).

As a microcosm of the greater area to a certain extent, by 2000, Talbot Park's housing stock had deteriorated, the large internal reserve had become a wasteland and was considered unsafe (Schrader, 2005, p. 205). Consequently, as previously mentioned, Talbot Park was one of a small number of areas nationally redeveloped under HNZC's Community Renewal initiative. Aside from this redevelopment project, which provided a variety of modern housing types and public spaces for a somewhat isolated area, the Tamaki area has, like the Lower Hutt region, had a diverse evolution and redevelopment. This is continuing under the local council's multi-agency Tamaki Edge urban renewal project – the largest of its kind in New Zealand (Auckland City Council, 2011).

## Statistics

Statistics obtained from Statistics New Zealand's 2006 *Census of Population and Dwellings*.

### **Point England**

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*Population* – 4,227

*Dwellings* – 1,251

*Housing* – 19.1% of homes are privately owned, with or without a mortgage, compared with 50.7% for the entire Auckland region.

*Average Household Size* – 3.4 people, compared with 2.9 for the entire Auckland Region.

*Unemployment Rate* – 12.2%, compared with 5.6% for the entire Auckland Region.

*Income* – Median income is \$14,700, compared with \$26,800 for the entire Auckland Region.

### **Glen Innes West**

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*Population* – 4,533

*Dwellings* – 1,290

*Housing* – 29.6% of homes are privately owned, with or without a mortgage, compared with 50.7% for the entire Auckland region.

*Average Household Size* – 3.5 people, compared with 2.9 for the entire Auckland Region.

*Unemployment Rate* – 9.8%, compared with 5.6% for the entire Auckland Region.

*Income* – Median income is \$19,200, compared with \$26,800 for the entire Auckland Region.

## Illustrated History



**Figure 29.** Talbot Park, Point England, under construction in the early 1960s. The construction of star flats has not yet begun, but duplexes and larger multi-unit state house designs are evident. The Point England case study area is in the mid-ground to the right, with the Tamaki River in the distance (Archives New Zealand - AALF, W3300, W13).

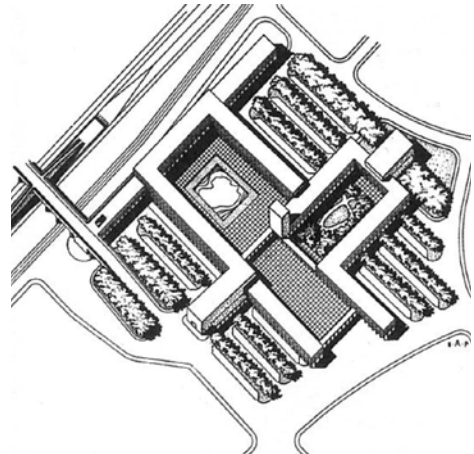
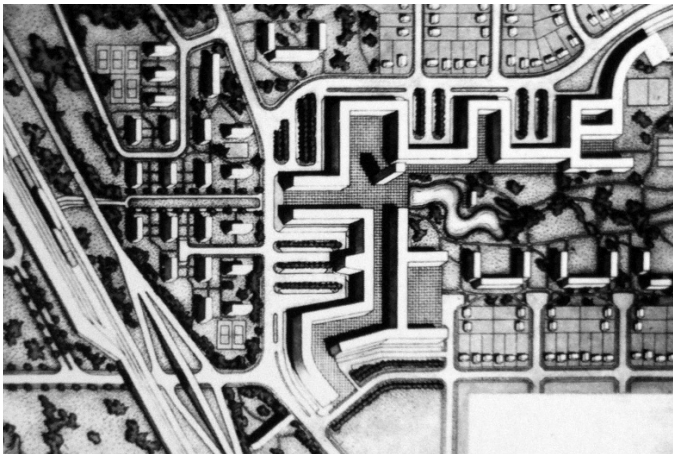


**Figure 30.** A 1962 aerial photograph of the developing suburb of Glen Innes. A large part of the suburb, colloquially known as 'The Heights,' was reserved for private development with West Tamaki Road forming a 'social buffer' (Boyce, 2010, p. 111). The Glen Innes case study area is in the bottom right corner of the image (Alexander Turnbull Library - WA-57040-G).





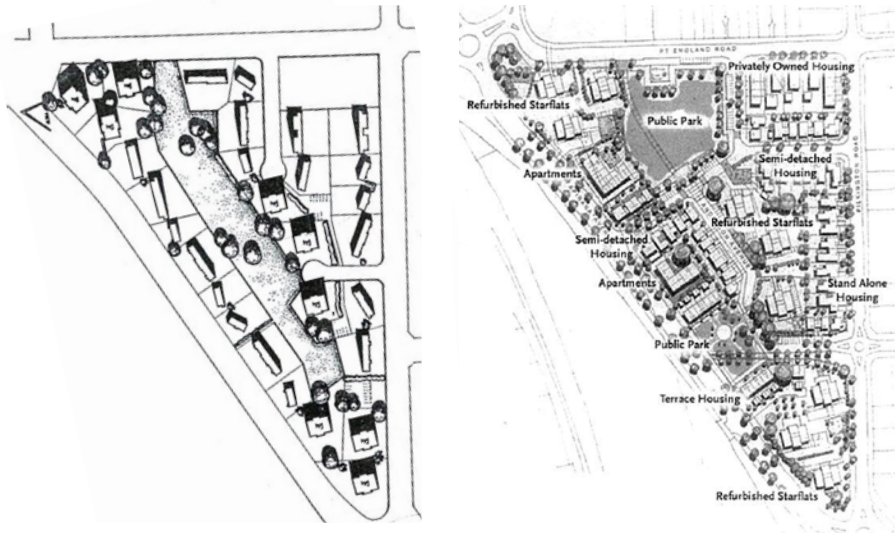
**Figure 31.** Aerial view of the southern end of the Tamaki state housing scheme, (Northern Panmure). Its concentric crescents reflect Garden City planning principles (Archives New Zealand - AALF 6112/3, 18/2/15).



**Figures 32/33.** Plischke's 1944 design for the Tamaki Town Centre (left) shows clear parallels to his design for the Naenae Community Centre of the same period. Its scale is vastly larger than the centre which was established on the adjacent site (Archives New Zealand - AALF 6112/3, 20/3; Plischke, 1947).



**Figure 34.** Talbot Park's original public reserve was bordered by multi-unit state housing. These dwellings have since been removed and the site redeveloped as part of HNZC's Community Renewal initiative (Schrader, 2005, Unpaginated).



**Figures 35/36.** 1958 site plan and 2002 redevelopment plan for Talbot Park. Note the preservation of star flats and privately owned housing, while the rest of the buildings have been demolished or removed, and replaced with a variety of higher-density state housing (Schrader, 2005, pp. 113, 205).



**Figure 37.** Contemporary view of Talbot Park following the Community Renewal project. A range of housing types and safer, more open public spaces are now provided. Author's own image.



**Figure 38.** Tamaki Town Centre, Auckland's first comprehensively planned example. A range of community services and public transport are located nearby. Author's own image.





**Figures 39/40.** Contemporary streetscapes of Point England and Glen Innes. Recent street interventions in Point England intend to slow traffic while creating an attractive environment. Author's own images.







**Figures 41/42.** Contemporary views of public inner-block reserves (green corridors) within Point England and Glen Innes. The Point England example was the most successful of all those post-war examples observed, primarily because of its large, open street presence, as well as the connection it provided between streets. Author's own images.



## **Fieldwork Comparative Analysis A**

### ***Properties – Contemporary Conditions & Redevelopments***

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#### **Foreword**

Hereinafter, the use of suburb names refers only to the cross-sections of each suburb surveyed, not the greater area, unless otherwise stated. Additionally, as previously mentioned, analytical and ownership maps of each case study area are provided later in this chapter, while pie charts documenting the collated primary fieldwork data are appended.

#### **Context**

##### *Sales History*

Epuni had the highest number of properties with a sales history (privately owned), followed by Naenae, Glen Innes, and Point England.

##### *Property Area*

Glen Innes had the greatest variety of property sizes and the highest number of properties over 701m<sup>2</sup> – in part due to the undulating topography of the area, as well as its curvilinear street pattern.

Epuni had the greatest number of properties under 700m<sup>2</sup> – in part due to its high instance of subdivision or shared titles, as well as its integration with an earlier suburban development.

Property sizes were generally larger in the East Auckland case study region than that of Lower Hutt, which was developed earlier.

##### *Approximate Built Site Coverage*

Epuni had the greatest variety of built site coverage. It also had the highest number of properties with a built site coverage of less than one-half – in part due to its high instance of subdivision or shared titles, dwelling additions and generally smaller property sizes.

## **Common Redevelopments**

### *Garages, Carports & Outbuildings*

Naenae had the highest number of garage or carport additions. Interestingly, of the cross-sections surveyed, the two with the least number of properties with a sales history regionally had the most garage or carport additions.

Of those properties surveyed in Naenae and Glen Innes, garages and carports were almost exclusively located at the rear of the property against a side boundary. By contrast, Epuni and Point England had a higher number of properties with a garage or carport in front of the dwelling. Often this was due to the presence of two garages, or the subdivision of the site; however, other subdivided examples incorporated garaging between the existing and new dwelling.

Overall, garages and carports were predominately located to the rear of the surveyed properties. This is of significance and is a certain benefit of traditional state housing because contemporary suburban development has been criticised for enabling garages to dominate street facades, thus limiting property interaction with the street. While garages and carports were not a feature of state housing until more recently, their original planning anticipated their future development – houses were generally located off-centre transversely, which, in addition to their site width, enabled a driveway alongside the house and space for the erection of a garage or carport.

While carports were either lean-to additions or freestanding, all surveyed garages were detached. Again, this is a certain contrast to contemporary suburban development, which typically seeks to integrate the garage with the house.

In a few examples, car pads incorporated stops to prevent cars from being parked on the lawn or at the rear of the property, as was frequently observed.

Outbuildings were also located at the rear of the surveyed properties, most often against a boundary line.

### *Outdoor Living Spaces*

Outdoor living spaces were significantly more prominent in the East Auckland case study region than that of Lower Hutt. This is exemplified by the fact that twenty-two of the properties surveyed in East Auckland had such additions, while only four were observed in Lower Hutt. This contrasting occurrence could be in part due to climatic or cultural differences between the two regions.

The majority of the examples observed included a means of access between the lounge and the outdoor living space, overcoming the lack of indoor/outdoor connection of traditional state houses.

Typically outdoor living space additions were solar-oriented, and as a result, a number of instances were observed on the more public, street-side of properties. Consequently, some such additions lacked privacy; however, this could be overcome to a certain extent through the incorporation of trellis screens or landscaping.

The majority of the outdoor living spaces observed were uncovered, however, a few were semi-covered with pergolas.

### *Landscape*

Glen Innes had the highest number of properties with particularly established landscaping, while Point England had the least. As anticipated, such development was more prominent in those cross-sections regionally with a higher number of properties with a sales history.

While some attempt was made to integrate established trees within state housing developments originally (Firth, 1949, p. 13), landscaping was generally not implemented. This significantly contributed to the barren and monotonous environments of some suburbs. While a number of properties still appear this way, over one-fifth of the properties surveyed had established landscaping. This made a considerable aesthetic contribution to the properties, as well as the greater area.

Landscape features primarily existed against boundary lines and dwelling foundations defining an area for lawn between. Landscape features also occurred against pathways and outdoor living areas in a number of examples. Trees predominantly existed near boundary lines, although some were also established in the middle of lawns. In addition, there were some differences between the types of plants used in each region; for example, Nikau Palms and Cabbage Trees were almost exclusive to East Auckland.

### *Dwelling Additions & Alterations*

Epuni had the highest number of dwelling additions or alterations, while Naenae had the least. Again, such redevelopments were most common in those cross-sections regionally with a greater number of properties with a sales history, as anticipated.

Dwelling additions were typically to the front or rear of the surveyed properties – in part due to restrictions defined by site width, council regulations, and the presence of driveways alongside houses. Interestingly, additions to dwellings in the East Auckland

case study region often retained the characteristic state house style, markedly more so than those observed in Lower Hutt. Further analysis of additions and alterations to post-war state houses is documented in the following chapter.

A few properties in each cross-section were also noted to have incorporated handrails or ramps for accessibility.

### *Entrance Alterations*

Closely followed by Naenae and Epuni, Glen Innes had the highest number of properties that made deliberate attempts to address the street and denote the main entrance. Such alteration particularly occurred to those properties where less public or less active rooms such as the kitchen, laundry and bathroom faced the street.

Entrance alterations were achieved in a number of ways including the extension of the front porch and the addition of a verandah, or where a dwelling had been extended, a covered entranceway was also often provided. Typically, a pathway that led to the front entrance was also present, either from the driveway, or less commonly, the footpath.

### *Colour*

While making an important contribution to the streetscape, the use of colour was also seen to be of significance in distinguishing ownership, and providing a level of personalisation to each property. This was particularly the case with semi-detached dwellings, although some had a unified colour scheme.

Although a number of exterior colour schemes prevailed, the majority of the surveyed properties utilised them in the same way. Typically the facade material was a base colour, which was then offset by white window frames and accented sills. The accent colour often matched the foundations, and in some cases the property fencing as well.

Brick facades typically retained their original finish, as did the tiled roofs of the majority of the surveyed dwellings. In contrast, corrugated iron roofs were a variety of colours, but often matched the dwelling's accent colour.

## **Boundary Conditions**

### *Adjacent Boundary*

While each of the cross-sections surveyed had a similar variety of boundary conditions between dwellings, there was significant difference, particularly regionally, between the types used. For example, the use of 'high rear-low front' fencing was more prominent in the Lower Hutt case study region than that of East Auckland. Conversely, 'low, medium or permeable' fencing, 'low rear-nothing front' fencing, and hedges or vegetation were more common in the East Auckland case study region.

Though little comparison can be made between those properties in each cross-section regionally with a higher percentage of properties with a sales history, those with a lower percentage had the greatest instance of both 'high rear and front,' as well as 'low rear-nothing front' fencing between dwellings.

### *Street Boundary*

Somewhat surprisingly, each of the cross-sections surveyed had a comparable constitution of street boundary conditions. While Naenae had the greatest number of properties with no definitive street boundary, Glen Innes was the only area to break the trend established by the other cross-sections by having more 'high rear and front' fencing, than hedges or vegetation.

### *General Boundary Conditions*

Originally defined by fencing only to the rear as aforementioned, the prevalence of 'high rear-low front,' and 'high rear and front' fencing along boundary lines between dwellings is one of the most significant redevelopments of the surveyed properties. Paired with the most common street boundary condition, 'low, medium or permeable' fencing, the majority of the surveyed properties can be seen to be an evolved state of their original establishment. That is to say, while responding to residents' desires for privacy and security, they maintain a certain connection with the street. This is of significance in denoting the character of the area, while it also aligns with the traditional notion where the front of the property is more public, and the rear is more private.

Boundary definition was of significance in denoting ownership and distinguishing between public and private space. While fencing was undoubtedly the most definitive boundary condition, the relative success of those that were without fencing came down to their detailing and maintenance. Well-kept gardens and lawns provided a certain level of boundary definition, as did paved car pads for instance.



Detailing was also of particular significance if fencing was tall against the street boundary. Often this resulted in a hard edge and a loss of interaction with the street. This could be overcome to a certain extent through, for example, planting against the street side of the boundary, or the use of trellis-topped fences. Vegetation that extended beyond the fence height was also an effective way to mitigate the impact of a high fence.

Maintenance of property boundaries was also of significance as the presence of graffiti and vandalism detracted from the aesthetic quality of the suburban environment.

It was also observed that, to a degree, where properties had definitive side boundaries to the footpath edge – ‘high rear-low front’ fencing for example – that there was an implied street boundary between these. Well-established trees close to the street boundary also achieved similar results.

The addition of outdoor living spaces to the street-side of properties also defined the street boundary to a certain extent as it established a direct and dynamic relationship with it.

The undulating topography of Glen Innes provided opportunity for boundary conditions that were distinctive from those observed elsewhere. By nature of their location, properties on either the high-side or drop-side of the street attained a default street boundary condition. This was most obviously the case in properties where no other street boundary condition was present. Although essentially unavoidable, it also resulted in properties which were overlooked by the street, converse to the original design principles of state housing (Firth, 1949, p. 18).

## **Subdivision**

Aside from Naenae, over a fifth of the properties of each other cross-section had been subdivided, or were on shared titles.

Original state houses were sited with a bias towards the front half (street side) of their sections, and fluctuated in setback from the street. This location enabled the properties to be subdivided or shared, and a new dwelling to be established on the rear lot.

The majority of the subdivided or shared properties surveyed had shared access along the side of the property. However, one Epuni property, and seven others from the East Auckland case study region contrasted this by having separate access for each dwelling. This was typically achieved through the incorporation of driveways on either side of the section against the boundary lines. Less commonly, two driveways were established directly adjacent to one another. Consequently, garages and carports were a common feature in front of these dwellings, which placed further restrictions on the amount of outdoor space available to the original dwellings.

Most notably in subdivided or shared properties, the driveway was fenced off from the front yard, defining outdoor space for the original dwelling.

Finally, one privately owned Epuni property contrasted all of the others surveyed in that it was established on the rear of two adjacent properties (also privately owned), with a central access way servicing each of the dwellings. While increasing density, this method did not significantly compromise section size, as is commonly the case with rear-lot subdivision. Similar examples were also found in Point England; however, these were state owned, more extensive and involved the partial subdivision of a number of adjacent properties. Compared with the previous example, the resulting sections were smaller and less well structured.





## Fieldwork Comparative Analysis B

### *Properties – Private versus State*

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#### Foreword

Generally, and as anticipated, of the properties surveyed in each cross-section, those in state ownership exemplified little development. Indeed, as identified in the previous chapter, aside from the government's recent initiative to insulate, and to modernise the kitchens and bathrooms of selected state houses, very little other intervention has occurred. The following sections illustrate this.

#### Common Redevelopments

##### *Garages, Carports & Outbuildings*

In addition to being the most common development overall, garages and carports were also the most prominent addition to the state-owned properties surveyed. Over half of these properties had such additions.

Other additions or alterations to the state-owned dwellings surveyed were not explicit, or simply did not exist.

##### *Landscape*

The vast majority of the state-owned properties surveyed were noticeably underdeveloped in terms of site structure and landscape. However, a few properties from the East Auckland case study region contradict this, being particularly well-established. This was achieved through a variety of means including temporary additions, such as potted plants.

While well-established trees and hedges were present on a number of state-owned properties, the presence of grass typically dominated from the footpath edge to the foundations of the dwellings. This is significant because HNZA is not adverse to the development of gardens – they even run biennial garden competitions – and means that the lack of establishment of gardens can be in part put down to tenants' financial situations and amount of spare time, as well as the temporary nature of their tenure.

## **Boundary Conditions**

### *Adjacent Boundary*

Of the state-owned properties surveyed, 'low rear-nothing front' fencing was a prominent boundary condition between dwellings – particularly so in areas where a small number of state-owned properties were clustered. It was also prominent in semi-detached dwellings. While such fencing provided distinct boundary demarcation at the rear of the surveyed properties, albeit with limited privacy, the absence of a definitive boundary condition between dwellings at the front of their sections led to questions over ownership. This was only further reinforced by the common absence of a definitive street boundary.

### *Street Boundary*

The majority of state-owned properties surveyed lacked a definitive street boundary condition, although a few did have fences defining the rear of the section. These ran between the side of the dwelling and the boundary lines. Although the absence of front fences is in keeping with original state housing design principles, the surveyed properties with their lack of landscaping lie far from design intent (Firth, 1949, p. 13).

## **Subdivision**

Interestingly, of the twenty-four subdivided properties observed, only five were in state ownership. Given their generally large section sizes and limited built site coverage, it is somewhat surprising that more instances of state-initiated subdivision had not occurred, particularly because of the high demand for housing in the surveyed areas. This also raises a question of how extensive previous government intensification policies, such as that announced by Goff in 1986, were and where they were centred.

## **Fieldwork Comparative Analysis C**

### ***Suburban Environments – Contemporary Conditions & Redevelopments***

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#### **Foreword**

While some of the environments examined in each cross-section and its peripheries can be deemed typical of suburban New Zealand, the experimental nature of the 1940s planning of Naenae, Epuni, Point England, and Glen Innes resulted in some alternative features. These features, as well as some more recent redevelopments are described and compared in the following sections.

Due to the extent of mixed ownership within the large-scale areas surveyed, it was ineffective and inaccurate to compare the areas in the same manner as the properties previously studied. Consequently, the following comparisons are made regardless of the ownership constitutions of the cross-sections surveyed.

#### **Suburban Structure & Streetscapes**

Despite differing street patterns – Naenae with its more concentric, curvilinear design, and Epuni with its traditional, rectilinear one – both have similar structural features, which arguably mirror each other either side of the dividing railway line. Buffered by dense vegetation, arterial roads run either side of the railway network, off which are primary and secondary residential streets. Public inner-block reserves (green corridors) and alleyways are also incorporated. These features provide pedestrian connectivity between the large blocks of housing and are closely associated with the suburban structure of each area – providing connections to schools and shops; or forming extensions of T-intersections or dead-end streets.

The street patterns of Point England and Glen Innes also differed. While Point England was rectilinear, Glen Innes was curvilinear – responding to the undulating topography of the area. Bordered by arterial roads on one side and a harbour inlet on the other, the two areas were separated by an extensive reserve system and suburban centre. Like Naenae and Epuni, both areas also incorporated alleyways and public inner-block reserves.

The streetscapes of Naenae and Epuni featured little in terms of landscape, other than grassed berms and mature trees. Established trees adjacent to the footpath, as well as those located on property sections, significantly contributed to the character of the areas. As previously mentioned, properties with established landscaping and reduced or permeable street boundaries also contributed to the character of the neighbourhoods.

Similar streetscapes to the Lower Hutt case study region were also found in East Auckland; however, local council urban intervention had recently occurred in some of the streets of Point England. This work included kerb extensions and street medians

designed to slow traffic and provide a safer pedestrian environment. They also contributed to the aesthetic quality and character of the area through the incorporation of trees and landscaping, as well as public art. Although well-intended, it was observed that the interventions had a predominately negative effect on the residents of the area – drivers drove dangerously to avoid them, they significantly reduced on-street parking and were poorly maintained.

### **Suburban Built Fabric**

While very few privately built dwellings were observed in Naenae, Epuni had a high concentration of them. This was because the state housing development of the area integrated with an earlier 1930s private development. Additionally, there were also a number of recently built private dwellings because of the subdivision of properties, or the demolition of original dwellings. The result of this mix was expressed in the character of the area. While Naenae had a relatively consistent character, a strong contrast existed within Epuni, most notably between the predominately state-built properties of Oxford Terrace (adjacent to the railway line), and its perpendicular avenues.

Point England and Glen Innes had a comparable number of privately built dwellings; however, while the majority of each area was 1950s state housing, Point England also incorporated a number of more recent state houses that were the result of redevelopment in the mid-1990s. This intensification involved the subdivision of a number of adjacent properties that approximately doubled their original dwelling density. With seemingly little structure and buildings angled on their small, awkwardly shaped plots, the manner in which the redevelopment was executed significantly contrasts the surrounding area and altered its character to a certain extent.

### **Alleyways**

Alleyways were noted during the fieldwork in Naenae, Epuni, and Glen Innes. While each of the alleyways were ineffectively denoted from their surrounding streetscapes, a variety of boundary conditions were observed. Typically these boundaries were tall and formed a hard, inactive edge; however, the Glen Innes example contrasted this. Lined on one side by a well-kept hedge, the other side of the alleyway featured tall, trellis topped fencing for one half, and, surprisingly, no definitive boundary for the other. In this instance the property with no definitive boundary was a Doctor's Surgery in a converted house, where perhaps private rear outdoor space is less of a priority.

Graffiti was prevalent in each of the examples observed, however, it was noted that it was less frequent where a property with a 'low, medium or permeable' fence overlooked an alleyway. It was also noted that graffiti in the Glen Innes example appeared to be attended to frequently.

In addition, while they were by no means perfect CPTED models, each of the alleyways were lit by street lamps at their entrances and exits, as well as along their lengths. They were also linear in plan with obstruction-free sightlines. However, other peripheral examples were not so well considered.

## **Public Reserves**

Part of a larger green corridor system, the public inner-block reserves of Naenae and Epuni were arguably of an inferior quality to the alleyways observed. Both reserves were notably unstructured, their access ways were poorly denoted, and there were no internal pathways, lighting, or public amenities. In addition, they were also typically bound by tall, impermeable fences that facilitated a stark, internalised environment and resulted in graffiti and vandalism. As a result, the reserves appeared to be poor remnants of earlier planning as they were little used and unsafe, contrary to their design intent.

The reserves of Naenae and Epuni were also without any landscape structure. Both featured expansive, poorly maintained grass fields, and while well-established trees were present in Epuni, Naenae had only a small number of saplings. Consequently, both reserves had significant potential to either be developed, or in-filled with housing.

Arguably of better quality than those observed in Naenae and Epuni, yet still in an unfortunate condition, a number of public inner-block reserves were also surveyed in Point England and Glen Innes.

The Point England reserve was the most successful of all those post-war examples observed. This was primarily because of its large, open street presence, as well as its structure, which facilitated a linear connection between streets via a clearly denoted, tree-lined pathway. In addition, it was also the only reserve surveyed to incorporate recreational amenities.

Less successful aspects of the Point England reserve included its boundary conditions, which unlike the other reserves surveyed, included a number of properties with 'low, medium or permeable' rear fencing. While this contributed to the internal openness of the reserve and enabled passive surveillance, it also resulted in a distinct lack of privacy for the dwellings concerned, which was only reinforced by their lack of landscaping.

Finally, the reserves of Glen Innes formed an extensive chain through the suburb and were associated with a small, tree-lined stream. As with the Point England example, the reserves had significant street presence, however, like those observed in Lower Hutt, their skewed shape meant they quickly became internalised. In addition, they were unstructured, underutilised and poorly maintained. The connection they enabled was also often of little significance; while their scale, with long distances between access points, and typically tall, impermeable edges, was uninviting and potentially unsafe.

## **Fieldwork Analyses Summary**

While reinforcing the significance of this research, the fieldwork undertaken in the four case study areas also confirmed and extended the findings of the previous chapter on the history of state housing in New Zealand. This included how the experimental nature of this era of state housing has evolved little from its original establishment in numerous instances. For example, a number of the surveyed properties were on large, underutilised sections with limited instances of subdivision, despite their potential, and current housing demand. This was most commonly the case with the state-owned properties surveyed, which in comparison with those in private ownership, often lacked developed boundary conditions and landscaping.

The fieldwork also illustrated how some of these areas are now almost contradictory to their design intent, and exhibited the less-than desirable environments that can result. For example, a number of the inner-block parks are no longer perceived as safe because their internalised environments facilitate antisocial activity. In addition, their common lack of structure, lighting, landscaping, and amenities mean they are underutilised.

Conversely, the fieldwork also illustrated how some properties, and suburban environments to a lesser extent, have been redeveloped to respond to their shortcomings and criticisms, as well as societal changes and contemporary needs. For example, some of the streetscapes of the Point England case study area had recently undergone redevelopment, which despite some adverse results, also improved the aesthetic quality of the area and gave it a distinct character. Another example is how a number of the surveyed dwellings now incorporate outdoor living spaces and garages or carports.

The next chapter provides detailed analyses of both private and state-initiated redevelopment examples. These extend the findings of the initial fieldwork, and inform the development of regenerative design strategies, as well as the design case study itself.



## Aerial Photographs

*500m Radius – 1:10,000*

**Figure 43.**  
Naenae



**Figure 44.**  
Epuni





**Figure 45.**  
Point England



**Figure 46.**  
Glen Innes



## Suburban Diagrams

500m Radius – 1:10,000

**Figure 47.**  
Naenae



**Figure 48.**  
Epuni



**Figure 49.**  
Point England



**Figure 50.**  
Glen Innes





## Ownership Diagrams – Defined Sub-areas & Cross-sections

1:5,000

**Figure 51.**  
Naenae



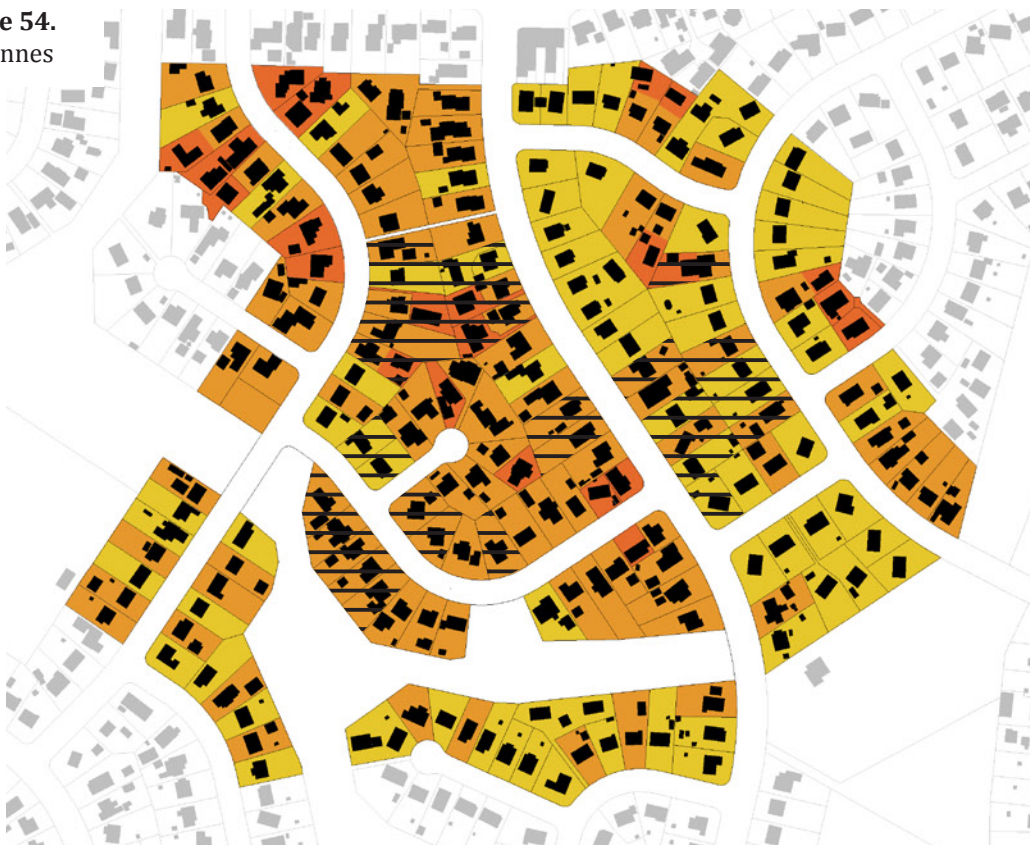
**Figure 52.**  
Epuni



**Figure 53.**  
Point England



**Figure 54.**  
Glen Innes



# Exemplar of Survey of State Houses

27

Address: 6 Meldrum Street, Naenae A

Study Further: Potentially.

Sale History: February 2004 CV: \$320k

Property Area: 507m<sup>2</sup>

Subdivided: No.

Housing Type/Year: 1940s Standalone

Form: Two-Storey, Hip Roof

Orientation: SW to Street

Site Coverage: Less than 1/3

Construction: Concrete Perm, Timber frame, Tile Façade Material: Weatherboard

Maintenance: Good.

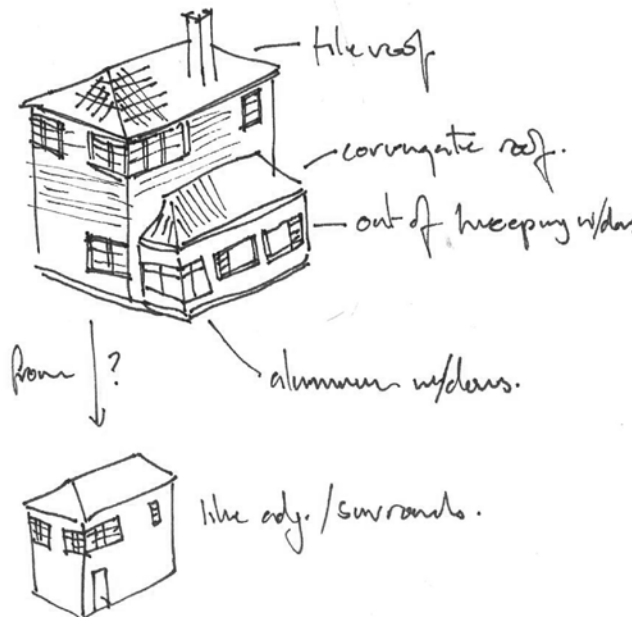
Colours: Cream, White windows, Olive sills.

Relationship to Adj. Properties: Similar Setback + form to 60% of st. adj. & opp. Low fence, vegetation - hedges.

Relationship to Street: Hedge defines boundary to footpath.

Low to 3 Garage to Rear: Obvious Developments: Potentially - form appears similar to other 2-storey houses in the area BUT in addition at lower level on the street side, - appears to be h/s.

Additional Comments/Diagrams:





## Exemplar of Survey of Suburban Environments

Page One

**Location/Type:** Barton Park, Inner Block Public Green Open Space, Common in Naenae.

**Connections:** A/W to Barton, Chapman & Sladden.

**Special Features:** None - devoid of anything.  
Garage/shed rears.

**Plot Structure:** Regular - few odd shapes. **Setback:** /

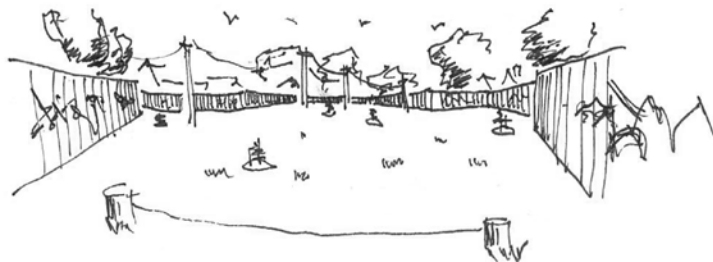
**Surrounding Ownership:** Varies - High % rented HNZC or Alt.

**Relationship to Dwellings:** 6ft + Timber fences - overgrown vegetation.  
- one property has gate on to.

**Landscaping:** 6 trees (small) w splints **Amenities:** None.

**Materials:** Grass. (somewhat <sup>sodden.</sup> overgrown.) **Maintenance/Vandalism:** Graffiti on fences freq.

**Additional Comments/Diagrams:** Poor remnant of 1940s plan obv. w  
Vandalism, little use, undeveloped, stark.  
• Provides connections thru blocks. - greenways.  
• Accessways narrow ~3m, not lit, high fences.  
- chains/steel posts to stop vehicles.  
• CPTED Field day.  
• No internal lighting or designated pathways.  
(just vast grassed space.)  
• Potential to develop/infill/open up.



# Exemplar of Survey of Suburban Environments

Page Two







## **Chapter Three – Section Two**

### **Post-war Suburban State Housing Redevelopment Examples**





## Foreword

In addition to the fieldwork undertaken in the four post-war suburban state housing areas, a number of redevelopment examples were also analysed. These redevelopment examples are classified in two sets. The first set overcomes certain limitations of the fieldwork, and is concerned with the redevelopment of selected individual properties of the cross-sections surveyed. This analysis is based on observations, as well as building permit records. Unfortunately, due to incomplete permit records, some of these redevelopments are only partially recorded, if at all; while they are also limited to the Lower Hutt case study region. Additionally, because of the aforementioned lack of redevelopment of the state-owned properties surveyed, the examples are also limited to those properties that are privately owned. Nevertheless, although not a comprehensive survey, the permit records make an important contribution to the research.

The second set of examples is concerned with contemporary state-initiated redevelopments. This analysis is based on observations, as well as existing literature. The first two examples are located near the case study areas of Point England and Glen Innes, while the third and fourth are located in the wider Auckland region. No such redevelopment examples exist in Lower Hutt, although a site in Pomare is soon to be developed. It is anticipated that this development will be similar to the Auckland examples (See: Housing New Zealand Corporation, 2011b). Finally, each of the examples is of a larger scale than the previous set, and involves the redevelopment of a number of adjacent properties and their suburban environments.

## Private Redevelopment Example One

*10 Dyer Street, Epuni*

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### Timeline

*1963*

Garage established at the rear of the property against the north-eastern boundary.

*1967*

Third, small bedroom incorporated, affecting the size of both the lounge and master bedroom. Dining area extended towards the south-east (street), affecting the entranceway with its angular planning. Original gable roof over the laundry replaced with a flat roof intervening beneath the eaves, also spanning the dining addition. Front and rear decks were also established around this time.

*1979*

Garage extension including new bathroom and carport.

*1986*

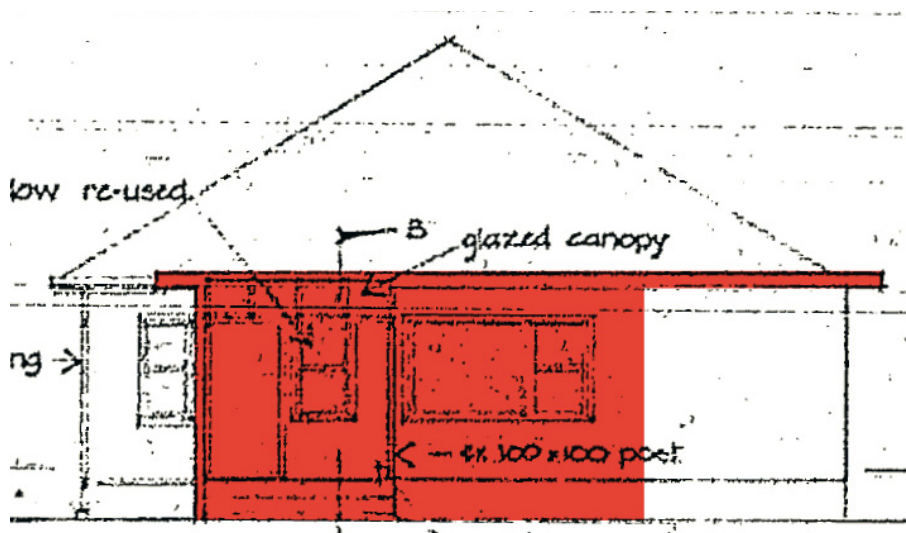
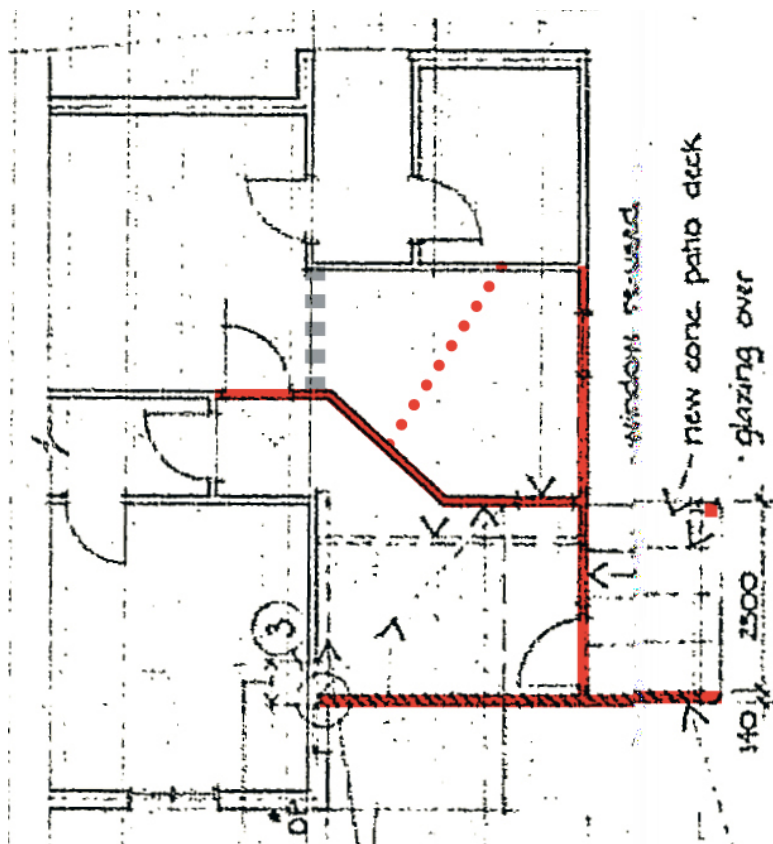
Dining area increased in size again and aligned to match the original planning. Entranceway extended around the dining area to form another room with a glazed porch. Board and batten cladding with a natural timber finish was used for this alteration, in contrast with the original brick veneer. Refer to figures 55/56 for the floor plan and south-eastern elevation of this alteration.

*1996*

Rear bedroom annex addition with a shallow, sloped roof formed as an extension of the eaves. Original windows were reused.

*Present*

The dwelling appears to have had further minor alterations. Most notably, the small glazed porch established in 1986 has now been enclosed, and a new porch has been established adjacent to it. A diagonal path leads to this entranceway from the street boundary, separating the front car pad from the lawn. Hedges and small trees are well-established against the house and the south-western boundary. A driveway runs the full width between the house and the north-eastern boundary to the garage at the rear. Fences are low at the front of the property, but taller at the rear. While there is no fence along the street boundary, the paved car pad and the well-maintained appearance of the property denote ownership.



**Figures 55/56.** 1986 floor plan and south-eastern elevation of alterations to 10 Dyer Street. Author's own collection.

Plans oriented North, 1:100.

Solid red lines indicate the alterations.

Dotted red lines indicate the location of previous alterations that have since been demolished.

Dashed grey lines indicate the location of original walls that have since been demolished.

## Private Redevelopment Example Two

### 16 Dyer Street, Epuni

---

#### Timeline

*1955*

Garage established at the rear of the property against the north-eastern boundary.

*1968*

Glasshouse established at the rear of the property against the south-western boundary.

*1970*

Much like 10 Dyer Street, a third, small bedroom was incorporated, affecting the size of both the lounge and master bedroom. The dining area was also extended towards the south-east (street), affecting the entranceway with its angular planning. The original gable roof over the laundry was replaced with a flat roof intervening beneath the eaves, also spanning the dining addition. Refer to figures 57/58 for the plan and south-eastern elevation of this alteration.

*1984*

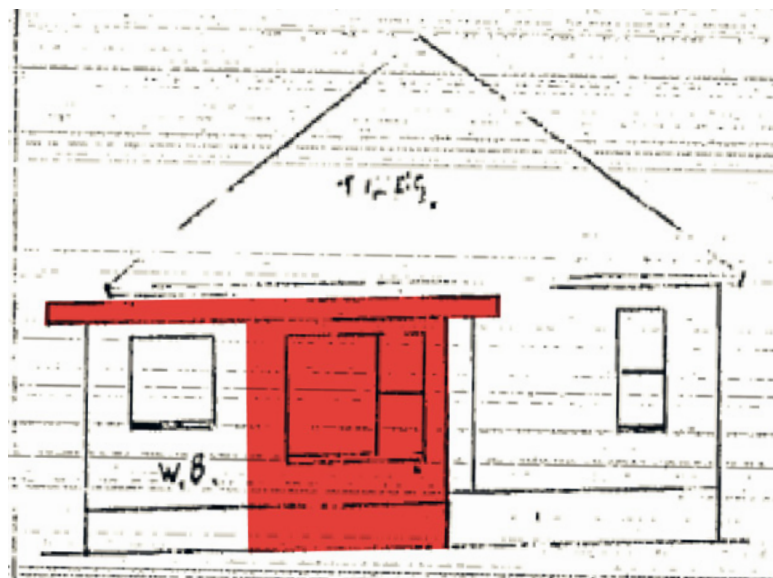
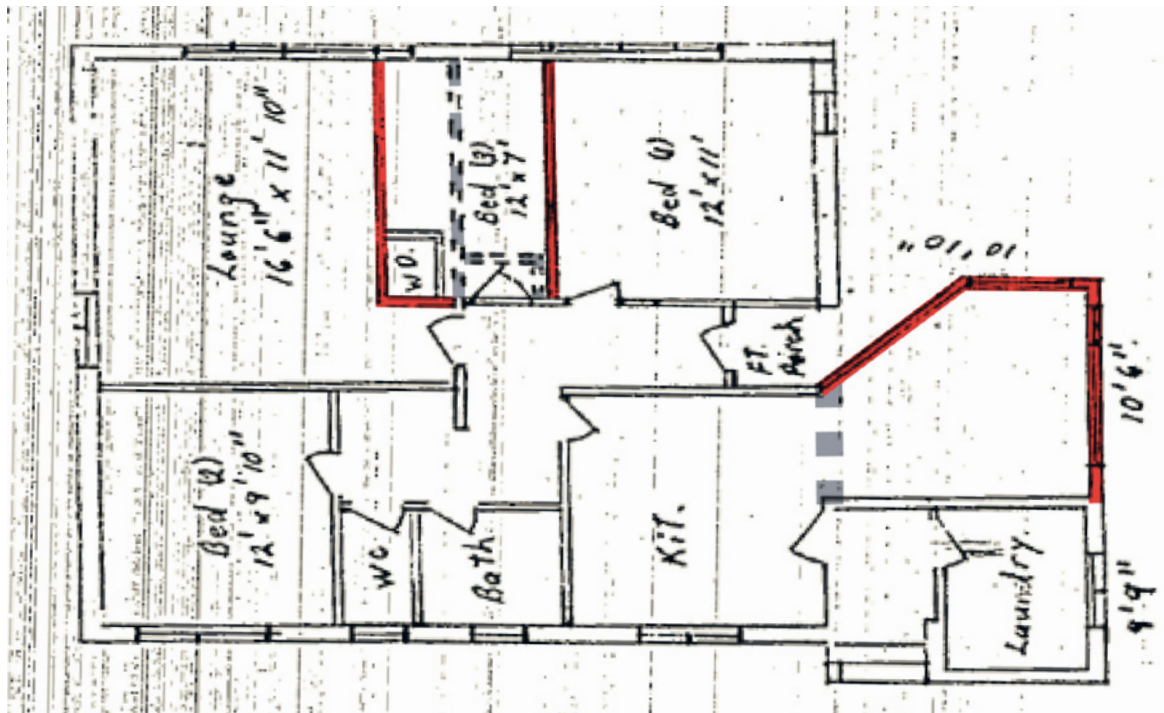
Existing garage replaced by another slightly larger one.

*1997*

Rear conservatory addition, intervening beneath the eaves with a sloped, glazed roof. Opening/door formed in the place of an original set of windows provides access from the lounge.

*Present*

The property is well-maintained and painted with a highly individualistic colour scheme. It appears to have had no further alterations. Fences are low at the front of the property, but taller beyond the line of the front facade. A low, plastered concrete fence defines the street boundary and is painted to match the house. Narrow garden beds are planted against the house and the inside of the front fence, with a lawn and paved pathway between. A driveway runs the full width between the house and the north-eastern boundary to the garage at the rear.



Figures 57/58. Floor plan and south-eastern elevation of 1970 alterations to 16 Dyer Street. Author's own collection.

## Private Redevelopment Example Three

*59 Lincoln Avenue, Eponi*

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### Timeline

*1956*

Garage established at the rear of the property against the eastern boundary.

*1967*

Dining area extended to the west slightly, with a two-bedroom addition to the north of this. The extension maintains the well-established state house style with the exception of the roof, which intervenes below the eaves with a low-pitch gable.

*1969*

Carport addition to the front of the existing garage.

*2005*

Open-plan family area created through the alteration of the previous dining and bedroom extension (northern most bedroom retained). Second bathroom established in place of the original laundry. Existing garage split into two sheds with one incorporating the laundry. Refer to figure 59 for the floor plan of this alteration.

*Present*

The property is well-maintained and makes good use of its corner site. It appears to have had no further alterations. Low timber fencing defines the majority of the property's street boundaries, with taller fencing at the rear defining the boundaries between neighbouring properties. Well-established trees against the dwelling and its fence lines border the front and rear lawn. A driveway runs the full width between the house and the eastern boundary to the carport at the rear.





Figure 59. 2005 floor plan of alterations to 59 Lincoln Avenue.  
Author's own collection.

## Private Redevelopment Example Four

*50 Thornycroft Avenue, Epuni*

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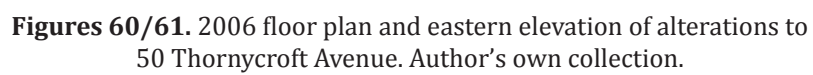
### Timeline

*2006*

Open-plan living area created through the removal of an internal wall and the interchange of a bedroom and the lounge. French doors now open off this living area to a new rear deck. The addition of a bedroom and en-suite to the north (street) provided the opportunity to create a covered entranceway associated with the front car pad. This addition has a low-pitch roof at the same height as the existing eaves and incorporates the reuse of original windows – maintaining some aesthetic qualities, while minimising cost. However, unlike the other private redevelopment examples, this addition does not retain the same floor level as the original dwelling because of the type of construction used – reinforced concrete slab instead of timber flooring and joists over piles with a concrete perimeter strip footing. Reflective of the original planning, inbuilt wardrobes have been incorporated throughout, including one for the laundry. The alteration also includes the future establishment of a garage to the rear of the property on the eastern boundary. Refer to figures 60/61 for the floor plan and eastern elevation of this alteration.

*Present*

The property is not yet completed, but has good potential in terms of maintaining street character. For example, the bedroom extension to the front of the site mirrors the original planning of the adjacent property. While this alteration has taken the place of the front lawn, with the realisation of the garage to the rear of the property the car pad could be grassed or landscaped. Additionally, trees and a garden bed effectively define the street boundary, while fences which are taller at the rear demark between properties.



## Private Redevelopment Example Five

### *35 Chapman Crescent, Naenae*

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#### Timeline

*1956*

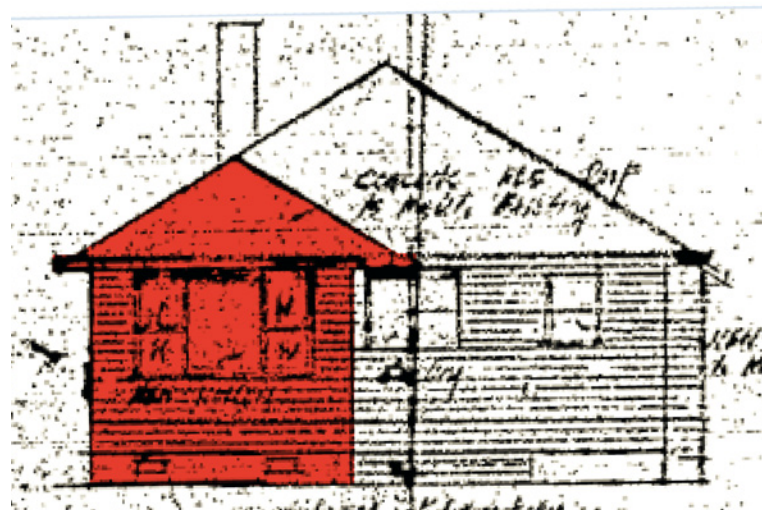
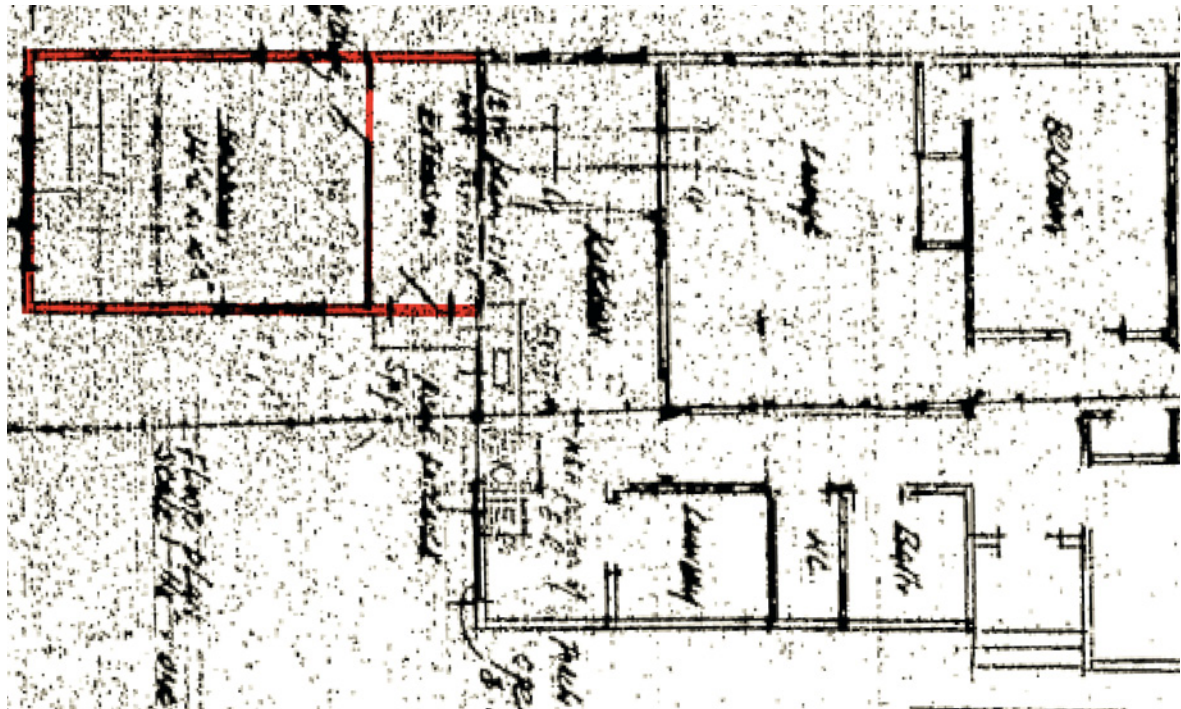
Garage established at the rear of the property against the north-western boundary (accessed off Barton Grove).

*1970*

Hip-roofed bedroom addition to the north-west faithfully in keeping with the state house style. Refer to figures 62/63 for the north-western elevation and floor plan of this alteration.

*Present*

The property has had further significant renovation. The 1970 alteration has been modified and is now larger, includes a deck, and its hip roof has been replaced with a flat one at a similar height to the eaves. In addition, aluminium window joinery has replaced the original timber joinery; a larger garage has been built in place of the existing one; and a carport has also been established along the south-western boundary. It can be assumed that internal alterations have also taken place. The property makes good use of its corner site, though there appears to be little private outdoor space. Low timber and concrete fencing defines the property's street boundaries, with taller fencing at the rear defining the boundaries between neighbouring sections. Garden beds are well-established against boundary lines, with grassed or concrete areas beyond these to the dwelling's foundations.



**Figures 62/63.** Floor plan and north-western elevation of 1970 alterations to 35 Chapman Crescent. Author's own collection.



## Private Redevelopment Summary

In addition to the previous findings, the private redevelopment examples demonstrate how state houses can be altered and extended, which is of significance to the later design strategies and design case study. The redevelopment examples also illustrate certain trends in additions and alterations over their lifetime. Of these trends, the most prominent include the shift towards open-plan living areas, as well as increased indoor/outdoor connectivity. The incorporation of additional bedrooms was also common. Together, these trends can be seen to address residents' desires, social shifts, and respond to the shortcomings and criticisms of state house design, including Toomath's decay that they were "not New Zealand houses" (As cited in Schrader, 2005, p. 99).

While internal alterations were common, additional rooms were typically formed as extensions of the original dwelling. These often retained the original dwelling floor level and intervened beneath, or at the same height as the existing eaves with either a flat or low-pitch roof. In some examples, the reuse of original windows at a consistent or relative height to the existing dwelling's retained aspects of the state house style, as did the continuation of foundation, wall and eave planes – particularly when the materials and colours were chosen to match those existing. However, the recurrent absence of a dominant roof – a defining characteristic of the state house style – was arguably the most obvious feature which contributed to these extensions being acknowledged as more recent developments. Limited in aesthetic consideration with regards to maintaining the state house style, the common use of flat or low-pitch roofs as opposed to gable or hip roofs can have numerous explanations including their more efficient use of materials and subsequent lower cost, as well as the cost and difficulty associated with of extensively intervening with an existing roof.

The findings of these private redevelopment examples are testament to Schrader's (2003, p. 43) comment that 'the ease at which an ex-state house can be brought up to modern standards reflects well the many architects who designed them.' Given their original and ongoing investment, the redevelopment examples are also testament to the fact that the vast majority of this era of state housing stock is worth retaining – the 'good bones' adage.

The following section of this chapter documents and analyses four contemporary state redevelopment examples from the Auckland region.





## State Redevelopment Example One

### *Rowena Crescent, Glen Innes*

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#### Overview

Designed by Architectus and completed circa 2001, the Rowena Crescent housing development reconfigured an existing quarter-acre subdivision. It aimed to provide a mixture of medium-density housing typologies and unit configurations for a range of occupants, including large families and the elderly (Barrie & Gatley, 2010) (17.5 dwelling units per hectare (DU/ha) gross).

The townhouse models are particularly intriguing for their 'experimental site design' that contrasts the surrounding suburban environment of the scheme (Turner, Hewitt, Wagner, Su, & Davies, 2004). Evidently influenced by New Urbanist planning principles, the townhouses feature rear access from private lanes. This 'liberates the street frontage by separating the main public elevation and the front door from the main car access, thus creating the possibility of an urban street dominated by active and continuous façades' (Turner et al., 2004) – though mature trees conceal this to a certain extent now. Each townhouse has a detached shared garage at its rear with a narrow, but long garden and patio area between. Zero lot line and cluster housing were also incorporated in the scheme, and are similarly accessed from tertiary residential streets, but have detached garages in front.



**Figure 64.** Aerial photograph of part of the Rowena Crescent development. Note its subsidiary roading infrastructure and how pedestrian connectivity is increased by central lot-wide lanes.



**Figure 65.** The rear of the scheme's townhouses and their semi-private vehicular lane. Author's own image.

## State Redevelopment Example Two

### *Talbot Park, Point England*

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#### Overview

HNZC's award-winning redevelopment showpiece, Talbot Park, was developed as a partnership between HNZC, Auckland City Council and the Glen Innes community. Based on earlier work by Brisbane-based urban designer Geoffrey Walker, HNZC and Auckland City Council, the scheme was master planned by Boffa Miskell (who were also the lead consultants and landscape architects), and features buildings designed by a number of architects, including Architectus and Designgroup Stapleton Architects (See: Sills, 2011).

Chosen for its proximity to the Tamaki Town Centre and public transport links, as well as its plagued history and poor, underdeveloped condition, the Talbot Park redevelopment project replaced a collection of 1960's multi-unit state houses<sup>13</sup> with an array of housing types (Bracey, 2007, p. 41; Sills, 2011). Ranging in size from one-bedroom units to eight-bedroom family homes, the project includes apartments, and terraced, semi-detached and stand-alone housing, which have raised the site's total number of dwelling units by 52, to 219 (Sills, 2011) (27.9 DU/ha gross). Privately owned housing was retained as part of the project, as were nine star flats that were renovated.

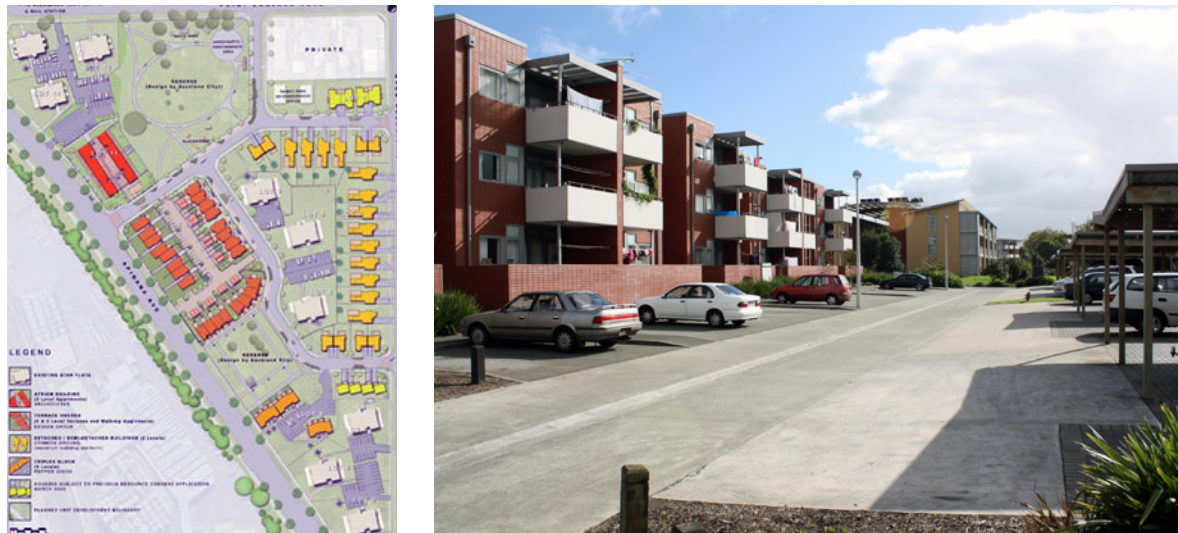
Informed by HNZC's then novel design guidelines, the scheme reflects the predominately Pacific and Maori demographic of the area, and is of high-quality in terms of both urban and architectural design. Colour, material and façade articulation have been cleverly utilised throughout the project to reduce monotony and distinguish dwelling units, while 'CPTED principles have been used to ensure all public spaces are clearly defined and overlooked' (Bracey, 2007, p. 42). Although these principles are achieved in a variety of ways, the use of permeable, powder-coated steel fencing is most prominent, and has resulted in a distinct lack of private outdoor space. Sustainable design features such as solar water heating systems, rain gardens, and rainwater collection tanks, have also been incorporated in parts of the development.

A hierarchy of buildings across the site allows the scheme to integrate well with its immediate environs. Higher density apartments on the western side of the site shield internal areas from the busy arterial road and industrial zone, while detached, two-storey dwellings on the eastern side reflect the character of the suburban fabric (Sills, 2011). The redevelopment of the internal area is one of the most significant features of the project. Once a long, narrow, unsafe park with limited connectivity and poorly defined boundaries (Bracey, 2007, p. 41; Sills, 2011); terraced housing, narrow landscaped roads, and two public parks incorporating playgrounds and public art, now grace the site. HNZC and tenants have noticed many improvements in the area since the project's completion, some with flow-on effects (Sills, 2011).

<sup>13</sup> Where practicable, these multi-unit housing blocks have been refurbished and used as relocatable homes in other housing projects (Bracey, 2007, p. 41).



Future redevelopment has recently been proposed for northern Glen Innes. This project will be HNZN's first significant mixed-ownership property development, and will help cater for the future growth of the Tamaki region (Housing New Zealand Corporation, 2011a).



**Figure 66.** Master plan of Talbot Park. Note the variety of dwelling types, site permeability, and integration of public parks bordered by housing, but open to the street (Sills, 2011). **Figure 67.** Semi-private streetscape bound by terrace housing, with apartments and a park in the distance. Author's own image.



**Figure 68.** Street scene within Talbot Park. Note the extensive use of permeable steel fencing which enables passive surveillance, but reduces privacy. **Figure 69.** Semi-detached, four-bedroom dwellings with notably articulated facades and a close relationship to the narrow road. Author's own images.

## State Redevelopment Example Three

### *Ventura Street, Mangere*

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#### Overview

Completed circa 2007, the Ventura Street (Tagata Way) housing development was designed by Designgroup Stapleton Architects, and is sited at the end of a block of 1960's stand-alone state houses – some of which it replaced. Strategically chosen for its proximity to local community facilities, the development provides a variety of housing types, which have more than doubled the site's original density (Designgroup Stapleton Elliot Architects, 2011) (22.1 DU/ha gross).

Designed to a common modular aesthetic to minimise cost, the scheme incorporates single-storey, two-bedroom dwellings for the elderly and disabled, as well as two-storey, three and four-bedroom dwellings for families (Butler, 2008, p. 19). Each dwelling is distinguished by a distinct colour scheme, which references the artwork of Pacific peoples, who are the predominant demographic of the area (Butler, 2008, p. 20). Derived from HNZA's *Pacific Housing Design Guide*, an interesting aspect of the development is that the garages, located next to the living areas, are intended to be used as secondary living spaces and interact with the street (Butler, 2008, p. 20). The relative success of this concept was observed during the case study field work, with a neighbourhood group's card game taking place within one garage.

Arguably the most significant feature of the development, the 'Homezone,' is a central road which provides 'permeability and neighbourhood focus,' claim the architects (Designgroup Stapleton Elliot Architects, 2011). Detailed with raised, cobbled street sections, extended kerbs, and articulated entrances and exits, this area achieves a 'pedestrian-oriented feel [...] and a sense of community for the homes that surround it' (Butler, 2008, p. 19). Landscape features include deciduous trees and rain gardens planted with native flaxes and grasses, which also occur against fence lines and property pathways. Grassed areas are also provided at the front and back of each section. CPTED principles have been instrumental in the planning of the project, as is demonstrated by the use of low timber fences at the front of dwellings which enable natural surveillance of the street (Butler, 2008, p. 19). Boundary fencing also denotes between public and private space, and provides residents with an area that they can care for and personalise (Butler, 2008, p. 20).

The Ventura Street scheme is used in the later design case study as a medium-density housing model because of its relative success and flexibility for a variety of demographic groups.





**Figure 70.** Aerial photograph of the scheme, illustrating the central Homezone, as well as the increased dwelling density when compared with its immediate suburban context.



**Figure 71.** Semi-detached, four-bedroom dwellings which form part of the Ventura Street development. Note their modularity and use of colour, as well as their natural surveillance of the street. Author's own image.

## State Redevelopment Example Four

### *Ernie Pinches Street, Mount Roskill*

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#### Overview

Completed in early 2011, the Ernie Pinches Street housing redevelopment went under the radar of this research until after the completion of the case study fieldwork. Designed by Stephenson & Turner, the redevelopment is of particular significance to this thesis because of its focus on regeneration, as opposed to the other state redevelopment examples described that have essentially established clean slate sites to develop.

Aiming to make better use of the 1950's housing estate (which comprises of both private and state-owned state houses, as well as privately built dwellings), while maintaining the character of the existing architecture and environment, the redevelopment involved building 45 new, medium-density houses, as well as relocating, refurbishing and modernising 23 existing state houses (Stephenson & Turner, 2011b, p. 7) (16.2 DU/ha gross). The redevelopment also incorporated new infrastructure and two new centrally-located urban parks (Stephenson & Turner, 2011b, p. 7).

The scheme's new dwellings range from two-bedroom units to six-bedroom family homes, in both stand-alone and semi-detached configurations (Stephenson & Turner, 2011b, p. 7). Existing state houses redeveloped as part of the project were either three or four-bedroom, stand-alone arrangements. All of the dwellings feature 'open-plan living and indoor-outdoor spaces that reflect today's urban lifestyle, while meeting [HNZC's] requirement for cost-effective, appropriate design' (Stephenson & Turner, 2011b, p. 7).

Figures 75–78 are examples of two existing state houses redeveloped by Stephenson & Turner for the scheme. Significant design features include the following:

- Open-planning of living spaces, typically resulting from the relocation of kitchens and dining areas.
- Greater indoor/outdoor connection, as well as the provision of outdoor living spaces.
- Integration of toilets within bathrooms.
- No modification of the external envelope, save the removal, relocation or addition of windows and doors.
- Site planning, including car parking, pathways and sheds

However, unlike the later design case study, of those examples provided, none incorporate additional bedrooms or bathrooms.



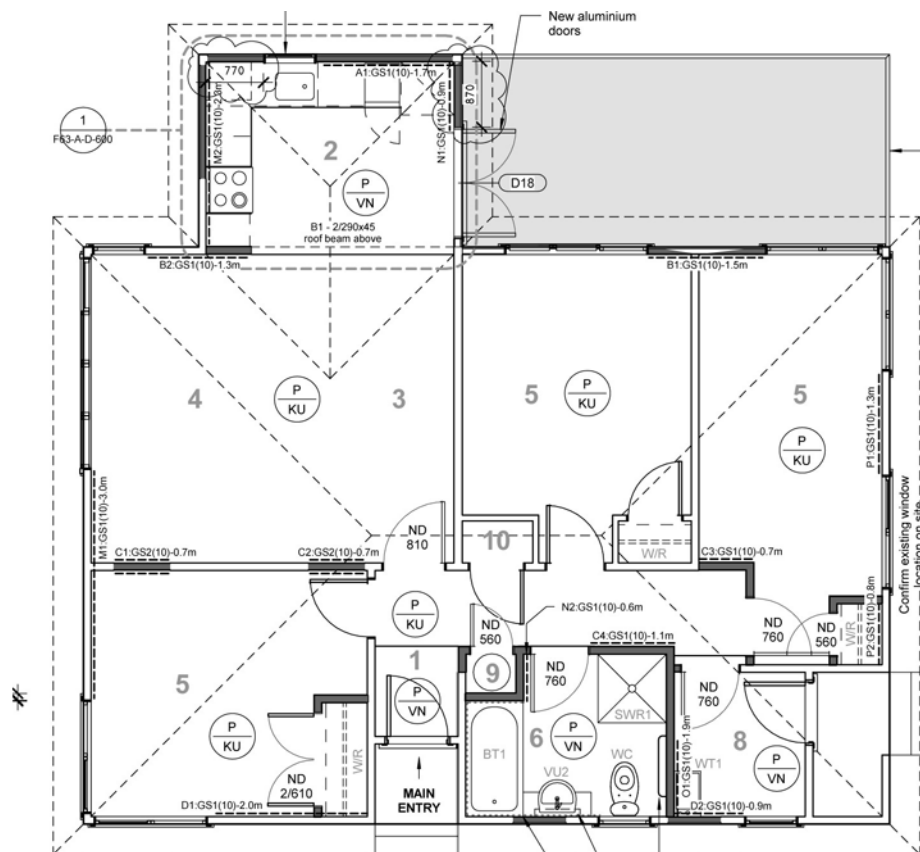
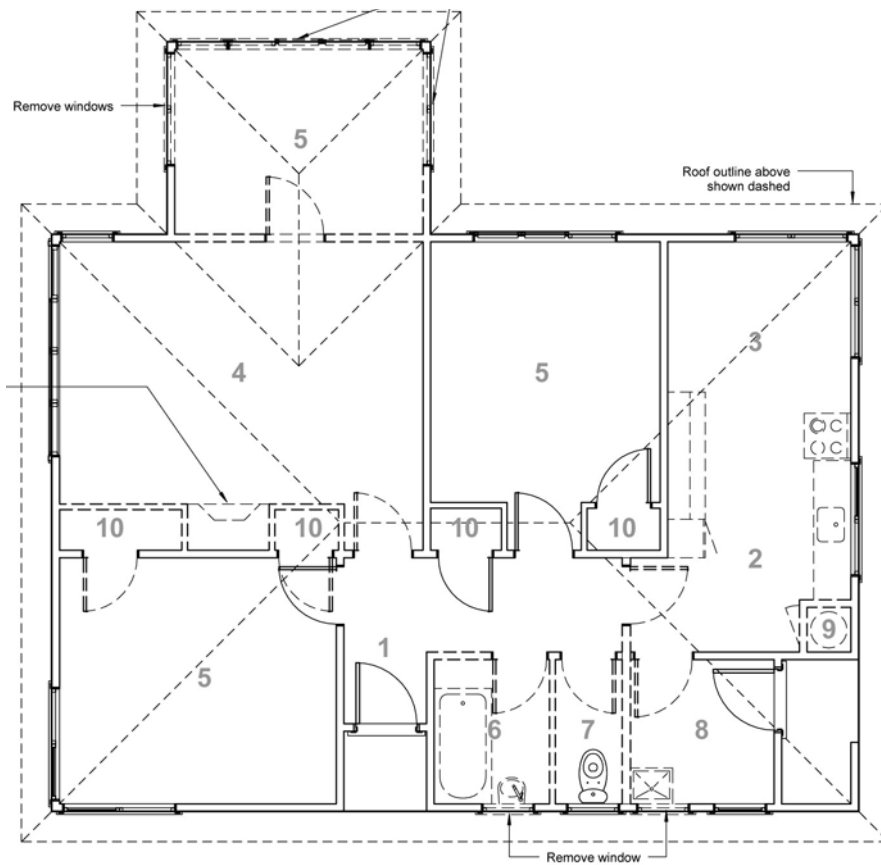
**Figure 72.** Master plan of Ernie Pinches Street redevelopment. Cleverly integrated with its existing suburban context, the scheme increases dwelling density, as well as connectivity and public open space (Stephenson & Turner, 2011a).



**Figures 73/74.** New and redeveloped state housing within the Ernie Pinches Street scheme. Note the deck and entrance additions to the existing housing stock, as well as the integration of small urban parks (Stephenson & Turner, 2011a).







## State Redevelopment Summary

The contemporary state redevelopment examples address some of the problems associated with state housing historically. Like the private redevelopment examples, they also demonstrate features that are of significance to the regenerative design strategies and design case study.

One of the most significant points of the contemporary state redevelopment examples is how large-scale interventions and design strategies can be achieved when large tracts of land, or even small concentrations of sections, are in common ownership. Such redevelopment is not viable in privately owned suburbs because of their fragmented ownership structure. In addition, the examples also exemplify the benefits of a multi-agency approach to redevelopment. However, while of greater scale than the piecemeal private redevelopment examples, the state examples were still limited in scope. For instance, they did not significantly alter existing suburban patterns beyond the scale of a block. The potential of even larger-scale redevelopment is examined in the later design case study.

Another significant point was that the contemporary state redevelopment examples also increased the density and diversity of the housing stock on their respective sites. Consequently, their section sizes were smaller than those of traditional state houses; however, this was offset by the incorporation of public open spaces that could facilitate community interaction, but would not be detrimental if they were not used. Through the provision of pathways, lighting, landscaping, and amenities, these public spaces were designed to be permeable, safe, and attractive. All of the examples also incorporated new roading infrastructure to increase connectivity.

Like the private redevelopment examples, the dwelling types of each of the state examples also addressed shifts in housing demand, and responded to the past shortcomings and criticisms of state house design. However, in most instances this was achieved through establishing a clean slate site to develop new dwellings on. Additionally, some of the dwelling designs addressed the prominent demographic groups of their respective areas.







## **Chapter Four**

### **Post-war Suburban State Housing Regenerative Design Strategies**



## Foreword

The previous chapters of this thesis have identified not only the troubled history of state housing in New Zealand, its failures and criticisms; but also its contemporary conditions, which, in a number of instances, have evolved little from their original establishment and are now inadequate and undesirable. The previous chapters have also identified redevelopment examples that have begun to address the past problems of state house design, shifts in housing demand, and the current and future role of state housing in New Zealand. However, significantly more development is still required, and will continue to be a necessity given the age and deterioration of the current state housing stock, as well as the contemporary and predicted increasing future need for accommodation for lower socio-economic groups. To address this situation, this chapter establishes design strategies for the regeneration of post-war suburban state houses and state housing areas in New Zealand.

## Regeneration

Regeneration of post-war suburban state housing areas presents many opportunities to address contemporary and future housing issues from large-scale urban reconfiguration and intensification, to small-scale interventions on existing properties and dwellings. Regeneration of land already in state ownership also retains state interest in suburbs. As New Zealand's dominant settlement pattern, this is of significance for a number of reasons:

- It reduces the effects of suburban sprawl.
- It optimises and encourages the growth of existing amenities, schools, and industry. This is again belated recognition of Cumberland's argument that 'well-serviced older suburbs [are] now under-occupied' (Schrader, 2005, p. 125).
- It is cheaper than acquiring new land and establishing infrastructure on it. Additionally, as the government would find it difficult to acquire appropriately-scaled and valued central land, new land would most likely be peripheral and therefore inappropriate for the demographic groups which HNZC provides for.
- It enables large-scale interventions and design strategies to be achieved, as exemplified, to a certain extent, by the previous contemporary state redevelopment examples.

Furthermore, regeneration has potential wider effect in that by intensifying post-war suburban state housing areas, other land is available for private-sector development. This could address general population growth and housing shortages.

## Design Strategies

The following regenerative design strategies have been established from the case study fieldwork and redevelopment examples, and address significant issues that were identified in the previous chapters. Issues are presented first, followed by strategies that address them.

### Suburban Environments

#### *Suburban Structure & Connectivity*

Large blocks of housing and cul-de-sacs are prominent in post-war suburban state housing areas in New Zealand, resulting in a lack of connectivity. Although alleyways and public reserves were originally incorporated to provide pedestrian connectivity between streets, many are now underutilised because of their poor physical condition and the perception that they are unsafe. Suburban structure and connectivity could be improved with the following strategies:

- Regeneration of existing alleyways and public reserves. Such intervention should be informed by CPTED principles, and could include lighting, as well as clear demarcation of entrances and exits.
- Extension of cul-de-sacs to form through roads.
- Establishment of tertiary streets in addition to existing street networks. Such streets could be formed across or within existing blocks.

While all of these strategies may affect existing properties, the potential benefits of such regeneration are significant. For instance, while improving pedestrian and vehicular connectivity, new streets may provide opportunity to reconfigure existing plot structures to increase dwelling density, or incorporate new features such as public reserves.

#### *Intensification*

Post-war suburban state housing areas are commonly low-density and lack intensification, despite current and predicted housing demand. Strategies for intensification include rear-lot subdivision, tandem or multi-lot subdivision, and redevelopment of clean slate sites.

While all of the strategies have their disadvantages, they can all incorporate either new or relocated dwellings. The strategy that is chosen will depend on site and project conditions; however, it may involve a number of different strategies. For instance, the



relocation of existing dwellings may provide an opportunity to establish new dwellings on vacant sites. Alternatively, in large-scale projects, it may be necessary to subdivide some areas and completely redevelop others.

### *Public Reserves*

Public reserves within post-war suburban state housing areas are often underutilised and lack structure, landscaping, and amenities. They are often perceived as unsafe because their typically limited street presence and internalised environments facilitate antisocial activity. In addition, they are also often excessively large, and their skewed shapes mean they are unsuitable for some recreational activities. Consequently, many public reserves have potential to be reduced in size and in-filled with housing or other uses. Alternatively, strategies for regenerating public reserves include the following:

- Providing structure through the use of pathways and zones for different uses. Again, CPTED principles should be observed.
- Providing site-appropriate amenities. This could include the incorporation of public art.
- Providing site-appropriate landscaping.
- Enabling reserves to have an open and visually permeable street presence. This could be achieved by establishing new streets or by removing sections of perimeter housing. This is also beneficial for the aesthetic quality of the adjacent streetscapes.
- Enabling housing to front-on to and overlook reserves. This allows for passive surveillance while still maintaining privacy to the rear of the dwellings.
- Providing appropriate and definitive boundaries between public and private space. This was effectively achieved by streets in some of the redevelopment examples, but could also be realised by certain types of fencing, for example.

Similar consideration should also be given to other suburban public spaces such as streets and community or retail centres.

### *Suburban Character & Heritage*

The regeneration of post-war suburban state housing areas raises the question of to what extent should their original character be retained? Certainly some areas are of heritage significance – Hayes Paddock in Hamilton, for example (See: McEwan, 2008). However, as will be identified in the next chapter, other areas have been criticised since their establishment, and have not evolved as intended, or are no longer appropriate – Mangere and Porirua are significant examples of this, as is Otara – the design case study area. Therefore, regeneration poses an opportunity that should be seized in many suburbs, particularly those of little heritage significance. The degree to which regeneration alters existing suburban environments will depend on site and project conditions, however, the previous redevelopment examples exemplify how new, or modified suburban character can still be sympathetic to existing conditions.

Strategies for integrating with existing suburban contexts include the following:

- Retaining similar suburban structure and hierarchy.
- Retaining existing nodes and areas or uses of significance.
- Retaining existing landscape features where possible.
- Maintaining similar building types, configurations and orientations.
- Maintaining similar building footprints and heights.
- Maintaining similar distances between buildings and set-backs from the street.
- Utilising similar colour and material palates.
- Maintaining similar suburban conditions – front gardens, ‘low, medium or permeable’ street boundaries, and rear or side garaging, for example. Similarly, by utilising existing driveways as shared access-ways on subdivided properties, the number of new driveways (and possibly garages or carports in front of dwellings) can be limited. Such additions have a significant effect on existing suburban conditions.

In addition, while smaller section sizes are generally required to increase dwelling density, maintaining similar site width is arguably of greater significance than site length.

## State Properties

State-owned properties within post-war suburban state housing areas are often large and underutilised. They commonly lack subdivision, developed boundary conditions, and landscaping. Consequently, while many have evolved very little from their original establishment, they have also not evolved as intended. For example, the 'sweeping community gardens' (Schrader, 2005, p. 170) intended of the design of Naenae and Epuni, as aforementioned, are now often little more than sprawling lawns scattered with the odd established tree. Indeed, it is not surprising that Goff declared that the 'quarter-acre section had become a "burden instead of an asset for many people"' (Schrader, 2005, p. 125). Strategies for regenerating state properties include the following:

- Providing structure through the use of driveways and pathways, as well as zones for different uses, for example. Such zones should be flexible, and cater for a range of different requirements.
- Providing definitive and appropriate boundary conditions.
- Providing garages or carports for vehicles.
- Providing site-appropriate landscaping. Such landscaping should be able to be easily maintained, and could include vegetable gardens that the tenants could benefit from.
- Sections could also be subdivided or altered in some instances to incorporate new or relocated dwellings.

## State Houses

State-owned dwellings within post-war suburban state housing areas are typically unimproved and are therefore inadequate for contemporary housing demands. In addition, their lack of evolution from their original establishment also means that their shortcomings and criticisms, identified earlier in this thesis, are still relevant. While the fieldwork identified that some dwellings are excessively deteriorated or inappropriate, the vast majority show significant potential for improvement, as exemplified by the redevelopment examples. While some of the following strategies closely align with previous HNZA redevelopment schemes, the selective and limited extent of such work means many dwellings are still to benefit. Strategies for regenerating state houses to meet contemporary housing demands include the following:

- Providing additional bedrooms and bathrooms to accommodate larger families. The size of living areas should also be considered. Such rooms could be formed within, or as extensions to existing dwellings. Costs associated with such work can be minimised by limiting the extent by which they alter existing building structure and envelope.
- Modernising dwellings to comply with contemporary building codes, while also increasing their efficiency and flexibility. Given the age of the existing state housing stock, retrofitting insulation and modernising kitchens and bathrooms should be considered as a high priority.
- While acknowledging that contemporary social customs vary between cultures, dwellings should respond to New Zealand's environmental conditions and way of life. Such improvements could include open-plan living areas, increased indoor/outdoor connectivity, as well as appropriately oriented outdoor living spaces.
- Finally, utmost consideration should be given to the provision of a variety of flexible dwellings for the different demographic groups that HNZA provides for. While the existing state housing stock does, or can be altered to provide for the needs of many of these demographic groups, new dwellings must also be built to meet demand. These new dwellings could include models designed to specifically cater for those whose differing needs are ineffectively met by traditional post-war state housing, including single people, the elderly, and people with disabilities.

These regenerative design strategies are examined through the design case study, and are further discussed later in this thesis.







## **Chapter Five – Section One**

### ***Post-war Suburban State Housing Design Case Study***

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## Post-war Suburban State Housing Design Case Study

### *Otara, South Auckland*

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#### Overview

'Auckland's landscape was transformed in the post-war years' (McClure, 2009). With a population that was growing considerably, 'fuelled by the [...] baby boom and immigration' (McClure, 2010), as well as the construction of the southern motorway, which encouraged industry and low-cost housing, the city's aforesaid 'legendary' (Boyce, 2010, p. 108) pattern of urban sprawl began to be established. The South Auckland region had predominately been a farming and market-gardening area since pre-European settlement (McClure, 2010), however, needing a 'large area of raw land to develop' (Boyce, 2010, p. 108), the Housing Division of the Ministry of Works changed this and state housing soon 'dominated the landscape' (McClure, 2009), in place of a 'green belt' (Boyce, 2010, p. 113). The area, particularly Otara and Mangere East, was an attractive choice for the Housing Division because services could easily be extended from existing facilities, while its residents could be employed in the burgeoning local industries (Boyce, 2010, p. 108; McClure, 2010). Slum clearance and gentrification of the inner city in the 1970s reinforced the growth of the southern region, which became highly concentrated with Maori and Pacific peoples who were increasingly assimilated and urbanised (Hamer, 1995, p. 36; McClure, 2009).

During the 1950s, as previously mentioned, the government became increasingly concerned with 'mitigating the economic costs of sprawl' (Schrader, 2005, p. 110). In 1957, the government 'introduced a policy which required that 25 percent, and later 50 percent, of new state houses be multi-unit' (Ferguson, 1994, p. 195) – thereby 'saving land and increasing residential densities' (Schrader, 2005, p. 110). Ferguson (1994, p. 195) describes that this unpopular policy 'made its mark on the large suburbs built by the late 1960s, particularly Otara, Porirua and Mangere [...] [which, while] not purely state housing areas, [...] were all on a scale hitherto unimagined in New Zealand.'

During the same period, the government also 'began to move away from the provision of community centres and other facilities' (Ferguson, 1994, p. 200), and as a result, Cumberland's aforementioned criticism of state housing where he decries areas that are 'inadequately roaded, sewerred and lighted and unprovided with community services' (Schrader, 2005, p. 109), was again realised in the construction and early development of Otara. 'The time lag between the construction of housing and the arrival of community facilities [was] a constant grievance for tenants [...] [who] often had to draw on their own resources to get basic community amenities' (Ministry for Culture and Heritage, 2007). Commentators 'declared it unfair that these communities had to rely on their own resources for amenities such as crèches and play centres. Their skewed age structure – with many young families – effectively ensured that most would be unable to finance such structures until after the peak demand had passed' (Schrader, 2005, p. 186).

Ferguson (1994, p. 273) states that 'there was considerable common ground between the criticisms and the concerns of planners, architects, and social workers about the mass suburbs.' For instance, Schrader (2005, p. 118) explains that:

'Architects and planners who drove through the new state suburbs in Otara, Mangere and Porirua [...] worried that they'd got things wrong: The unremitting sameness of the housing, the streets that seemed to wend their way to nowhere, the absence of vegetation other than grass and the rows of old cars sitting lifeless in the street or on blocks across front lawns had created [a] slum-like appearance.'

However, 'undoubtedly, the pressure for better social services which was applied by many women and women's organisations in the 1970s was instrumental in improving the suburban environment' (Ferguson, 1994, p. 273). This action paired with the sheer 'concentration of Maori and Pacific people in Otara provided the mass needed to fund and sustain the erection of cultural facilities' (Schrader, 2005, p. 187) – an example of which is the United Flea Market, which was established by the Te Puke Otara Marae in 1978 as a 'fundraising effort for local charities' (Rowland, 2010). The market 'quickly became a major weekend event,' which continues today with a 'distinctly Polynesian/Pasifika atmosphere' (Rowland, 2010).

Rewi Thompson's 1987 redevelopment of the Otara Town Centre also made a significant contribution to the area. Commissioned by the Manukau City Council, the project sought to revitalise and create an identity for the vandalism-prone 1960s shopping mall (Barrie, 2009). 'The image of a fish was selected for the project, which Thompson realised in a series of canopies,' that 'reflected the predominately Maori and Polynesian character of the area,' and were decorated by local artists with paintings and rope lashings (Barrie, 2009). While a successful project, it seems unfortunate from observations made during the design case study fieldwork that this sense of identity does not extend to the surrounding area. Further, the general lack of development in the housing and suburban environments of the wider area was equally unfortunate.

Flaring in the 1970s and paralleling Porirua, Otara experienced the 'very real social problems that have beset large state housing communities,' including crime, gang violence, and racism (Schrader, 2005, p. 187). Economic reforms in the 1980s also had a profound effect on the area as they forced the closure of many industries and created high unemployment rates (McClure, 2010).

Today, South Auckland (Manukau City) is New Zealand's most ethnically diverse and fastest growing urban area (Otara Community Board & Manukau City Council, 2008), and Otara itself has a cultural diversity that strongly contrasts with the greater Auckland region. According to Statistics New Zealand's 2006 *Census of Population and Dwellings*, Otara North and West, the areas that encompass the design case study area, have a population composed of:

- 77.6% Pacific peoples compared with 14.4% for the entire Auckland region
- 21.3% Maori compared with 11.1% for the entire Auckland region
- 10% European compared with 56.5% for the entire Auckland region.

The area continues to have a high unemployment rate, and is one of the most deprived, poorest, and youngest regions of the country (42 percent of the residents are aged under 20 years) (Otara Community Board & Manukau City Council, 2008; Statistics New Zealand, 2006; White, Gunston, Salmond, Atkinson, & Crampton, 2008).

## Statistics

Statistics obtained from Statistics New Zealand's 2006 *Census of Population and Dwellings*.

### **Otara North**

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*Population* – 1,707

*Dwellings* – 336

*Housing* – 23.9% of homes are privately owned, with or without a mortgage, compared with 50.7% for the entire Auckland region.

*Average Household Size* – 3.4 people, compared with 2.9 for the entire Auckland Region.

*Unemployment Rate* – 12.2%, compared with 5.6% for the entire Auckland Region.

*Income* – Median income is \$14,700, compared with \$26,800 for the entire Auckland Region.

### **Otara West**

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*Population* – 3,237

*Dwellings* – 654

*Housing* – 23.5% of homes are privately owned, with or without a mortgage, compared with 50.7% for the entire Auckland region.

*Average Household Size* – 4.8 people, compared with 2.9 for the entire Auckland Region.

*Unemployment Rate* – 14.0%, compared with 5.6% for the entire Auckland Region.

*Income* – Median income is \$14,700, compared with \$26,800 for the entire Auckland Region.

## Illustrated History



**Figure 79.** A 1961 aerial photograph of part of the Otago design case study area. Ngati Otago Park and the Tamaki River can be seen in the distance (Alexander Turnbull Library - WA-56602-F).



**Figure 80.** A 1962 aerial photograph of the Otago design case study area. Otago Town Centre is yet to be developed, though the earlier stage of the Otago state housing scheme can be seen in the distance (Alexander Turnbull Library, WA-57355-G).





**Figure 81.** A photograph of an Otago street scene in the 1970s. 'Adorned with dilapidated motor vehicles instead of trees' (New Zealand Institute of Architects, 1972, p. 3), the area deteriorated soon after its completion and became 'notorious [...] for anti-social behaviour and run-down housing' (Derby, 2010).



**Figures 82–84.** Otago's Town Centre featuring Rewi Thompson's 'fish canopy' which gives some form of identity to the centre and reflects the predominately Pacific Island community, but does not extend to the surrounding area. Author's own images.



**Figure 85.** One of the Manukau Institute of Technology's Otago campuses. It is of significant size, yet does not integrate well with its surrounding suburban environment. Author's own image.



**Figure 86.** Sir Edmund Hillary Collegiate Intermediate School's entrance. The school occupies an inner-block site and similarly does not engage well with its environs. Author's own image.



**Figure 87.** One of two blocks of shops within the Otara design case study area. Roller-doors are frequently used to secure premises in the area, however, when closed they form a hard edge which is uninviting and often vandalised.  
Author's own image.



**Figure 88.** Ngati Otara Park – a popular sports ground, with Sir Edmund Hillary Collegiate Senior School, Lake Otara and the Tamaki River beyond.  
Author's own image.





**Figures 89–91.** Suburban environments within Otara. Note the poor demarcation of the majority of the properties, their lack of engagement with their sites, absence of landscaping save a few unkempt trees, and the somewhat monotonous conditions which were established and have little evolved. Author’s own images.







**Chapter Five – Section Two**  
*Pacific Housing & Urban Design*

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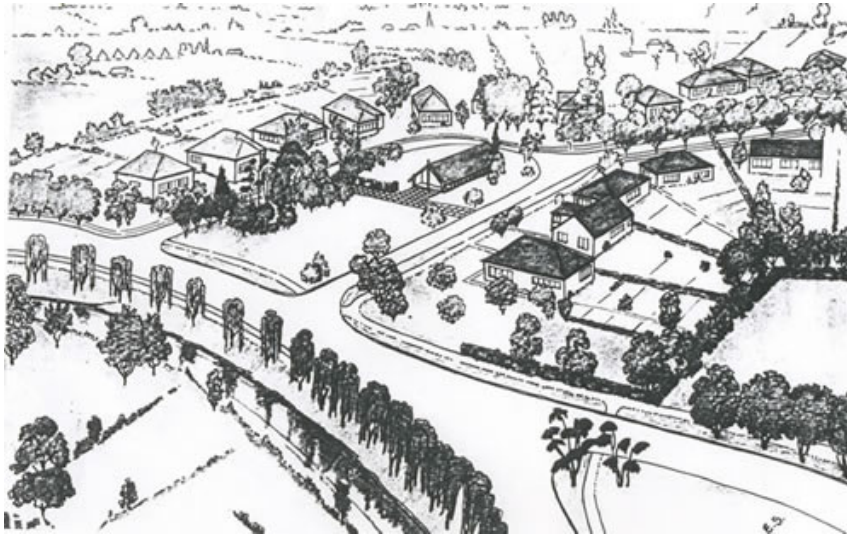
## Pacific Housing & Urban Design

This section identifies principles for Pacific housing and urban design. It is largely based on existing HNZN guidelines, as well as the research of Joel Cayford, a Lecturer in Planning at the University of Auckland, who recently completed a research paper entitled, *Appropriate Pacific Island Housing and Urban Design in South Auckland* (See: Cayford, 2009). This section is also supported by the work of Gray (2004) and Koloto & Associates, New Zealand Institute of Economic Research, & Gray Matter Research (2007). The principles outlined are generalised to be representative of all Pacific peoples, as 'while there are specific differences between, [for instance], Samoan, Tongan, and Cook Island cultures, there are far more similarities' (Cayford, 2009, p. 3).

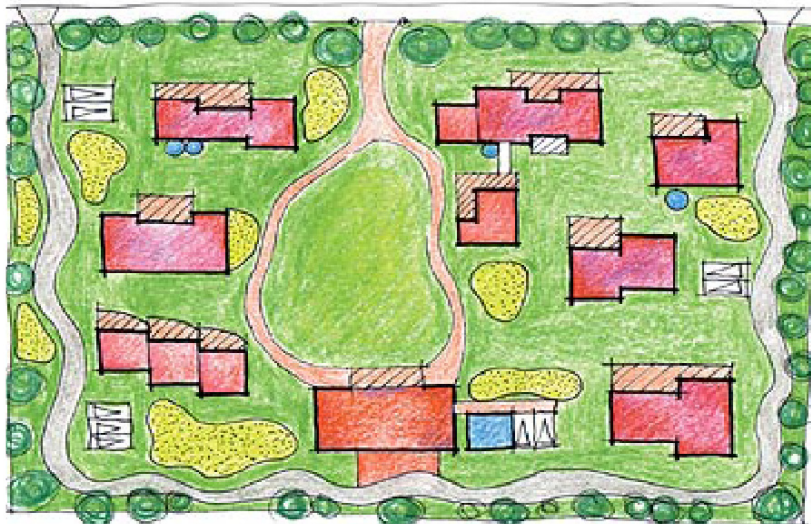
This thesis does not set out to specifically design a state housing model purely for Pacific peoples. HNZN already has guidelines and models for this with regards to housing (See: Housing New Zealand Corporation, 2002b; Gray, 2004). However, it acknowledges that, given the high percentage of Pacific peoples living in South Auckland, and more specifically within the Otara design case study area, it is important that the urban and architectural redevelopment of this region is culturally appropriate.

The importance of cultural consideration and appropriateness gains additional significance given that Pacific peoples have the lowest rate of homeownership, or partial homeownership of all ethnicities represented in Statistics New Zealand's 2006 *Census of Population and Dwellings* (21.8 percent compared with the national average of 53.2 percent). Consequently, rental accommodation provides housing for the majority of New Zealand's Pacific peoples, almost 40 percent of whom are in a dwelling owned or managed by HNZN (Cayford, 2009, p. 1). As a result, this majority is restricted in their adaption of these dwellings 'to better provide for their cultural and social needs' (Cayford, 2009, p. 11), as landlords 'would be unlikely to grant permission to tenants to establish additional buildings or make structural alterations to rented properties because of the temporary nature of their tenure' (Alatani, 2004). The cost and planning regulations associated with such redevelopments are also prohibitive factors (Cayford, 2009, p. 12). Generally speaking, New Zealand's Pacific peoples living in state or private rental accommodation are, in terms of urban and architectural design, obliged to live within a suburban environment that was 'designed to meet the needs of domestic groupings of the dominant ethnic group i.e. middle-class Pakeha' and their 'privatised,' 'nuclear family' lifestyle (Alatani, 2004, p. 90). This is opposed to the traditional 'communitarian' lifestyle of Pacific peoples (Alatani, 2004, p. 90).

This research has identified what is arguably a gap in the existing set of HNZN guidelines with regards to urban design for Pacific peoples. This is significant because such state-initiated urban design has existed for Maori since the design of the Waiwhetu Maori housing settlement, circa 1947. It is also strongly emphasised and conceptualised in HNZN's Maori housing design guide, *Ki te Hau Kainga – New Perspectives on Maori Housing Solutions* (See: Housing New Zealand Corporation, 2002a), which was initiated at the same time as that for Pacific peoples.



**Figure 92.** An illustration of the Maori housing settlement at Waiwhetu, Lower Hutt, circa 1947. Low-density state housing encircles a central marae and communal open space (Schrader, 2007).



**Figure 93.** A site plan of a suburban Papakainga (traditionally, a communally owned Maori land block or village) housing concept from Housing New Zealand's Maori housing design guide. The design incorporates a variety of home sizes and types with a focal communal building and common space (Housing New Zealand Corporation, 2002a, p. 5).

HNZC's *Pacific Housing Design Guide* (2002b, p. 5) identifies seven 'design themes' as a basis for the design of culturally appropriate dwellings, which are then explored in greater detail. These design themes are:

#### *Extended Family Living*

Pacific people live as extended families and generally a standard New Zealand house is not designed to cope with the pressures of this lifestyle. Therefore, houses for Pacific people should be specifically designed to accommodate more people.

#### *Flexible Design*

Houses for Pacific people must be very flexible and adaptable to cope with their lifestyle, both on formal occasions, such as a celebration with an overflow of visitors, and during everyday family activities.

#### *Multi-Purpose Spaces*

The garage is an example of a multi-purpose utility and living space, having significantly contributed to Pacific housing solutions. There is a need for a higher level of interior finishing to suit its function as a utility space for Pacific people.

#### *Openness*

The openness of a traditional Pacific house with no walls translated into a strong desire to include verandahs or other similar transitional spaces in the house design for Pacific people in New Zealand. These transitional spaces allow ease of indoor/outdoor connection and other benefits.

#### *Warmer Living*

Designers should aim to achieve internal layouts and site orientations that will maximise solar gain and provide natural warmth.

#### *Built to Last*

Houses are to be built of robust materials to increase the durability of the building for a larger number of people. Fixtures and fittings should also be a high-quality and durable.

#### *Pacific Identity*

Houses should provide a sense of shelter, protection, security, and 'Pacificness,' thus allowing Pacific people to reflect their identity. A sense of 'Pacificness' can be achieved in a number of ways, i.e. through the selection of materials, colours, finishes, furnishings, and landscape design.

While wider literature (See: Gray, 2004; Koloto & Associates, New Zealand Institute of Economic Research, & Gray Matter Research, 2007) concurs with HNZN's *Pacific Housing Design Guide*, and it can generally be adopted for the purposes of this thesis and design case study, some critique is also necessary. Design themes identified, such as 'warmer living' and 'built to last,' should be imperatives of 'good' architecture, not to mention their requirement under building and council regulations. Other design themes and their subsequent elaboration later in the guideline document can be deemed luxuries, such as secondary formal lounges. Another critique of particular significance is the lack of attention given to urban design for Pacific peoples in HNZN's design guides. This is especially pertinent given that Pacific peoples account for 25 percent of HNZN's tenancies (Housing New Zealand Corporation, 2009, p. 20).

Cayford (2009) makes no reference to HNZN's *Pacific Housing Design Guide*. However, his research into indigenous Pacific housing and urban layout, as well as his research into the socio-cultural adaptation of an existing urban context (Point England, Auckland) by Pacific peoples, is of significance in reinforcing and extending this literature.

With regards to indigenous Pacific housing and urban layout, Cayford (2009, p. 8) writes:

'The importance of a malae [central ceremonial and recreational open space in a village] to Pacific Islanders cannot be overstated. Equally, the function of outside spaces for community interaction should not be under-estimated, alongside the cultural attitude of openness and sharing. Finally, [...] it is evident that provision for communal food preparation and places to meet under shelter form a significant part of a Pacific Island village built environment, and meet different needs from the ever-present church building.'

Other key observations of indigenous Pacific housing and urban layout from Cayford's (2009) research include the following:

- Fale (indigenous houses) grouped around, and focusing on the central malae.
- The predominance of community or common space – as a result of the traditional communal ownership of the village's land.
- The proximity of gardens and other resources.
- The absence of boundary fencing.
- The prominence of the fale roof as the primary form of shelter, supported by exposed timber structure (which is often decorated), to which the walls (where present) are secondary and non-structural. Subsequently, there is typically little private space.



- The appropriation of Western building materials, and to a lesser extent, building forms.
- The acute social, cultural and climatic response, typical of vernacular architectures.

Cayford's (2009, p. 11) research into the adaption of an existing urban Auckland context by Pacific peoples identifies the limits they face in rental accommodation and the poor-fit it often provides. However, it also identifies their resourcefulness in order to meet, or begin to meet, their social and cultural needs in a foreign environment. Examples of this include the following:

- The modification of carports with lean-to shelters and walls to accommodate tables and seating. Garage alterations are also common, as is outdoor seating.
- The use of caravans for additional accommodation.
- The personalisation and decoration of facades.
- Temporary landscape features such as pot plants.
- The development of local community/religious facilities over time.

While Cayford's (2009) research does not establish a specific housing or urban design framework for New Zealand's Pacific peoples, he draws an important parallel to the physical environment described in Professor Michael Austin's thesis, *Polynesian Architecture in New Zealand* (See: Austin, 1976).

Austin (1976, p. 209) writes, 'what is certain is that the crisis of urbanisation for the Maori is the loss of the marae. But it is not of course, the buildings themselves or even what they symbolise. It is rather the loss of social space and social contact, and the architectural problem is to create this social space in the city.' Cayford (2009, p. 13) reflects that 'similarly, Pacific Island peoples, displaced into European urban environments, can be expected to suffer the loss of the malae and the loss of all those activities, learnings, beliefs and associations that go with it.'

Alongside other concepts, Austin (1976, p. 231) comments on suburban form, and claims that the 'potential of the suburb for forming social spaces is substantial.' 'The suburb is quite different from other forms of housing [...] [in that it] has a rich variety of defined spaces' (Austin, 1976, p. 231).

'Opportunities for self-expression are offered in the façade that each house presents to the street, which receives embellishment implying that the space of the front yard is considered as (even if not used as) social space. This could become the social space for the Polynesian – but only with a group of other Polynesian houses with an identity of interests (i.e. village origins or kinship). Thus a focus could be achieved similar to that of the pre-European settlement if a Polynesian people were given the opportunity to cluster in groups – the basis of the groups composition being existing social connections. This clustering and focusing can be achieved within the structure of the suburb, disrupting existing patterns far less than many proposals offered as alternatives to the suburb.'

'The focus may turn out to be a building or buildings, on the other hand it may be only slightly modified space. As we have stressed the only way by which such space can achieve meaning and significance is through social interaction. [...] Houses could help define a space that the inhabitants use, modify, and treat as their own' (Austin, 1976, p. 233).

Austin's description of what Cayford (2009, p. 17) terms a 'homogenous' Polynesian (Pacific) community is, to a certain extent, the reality of Otara, because of its high concentration of Pacific peoples. Cayford (2009, p. 17) agrees with Austin's position and concludes, theoretically based on Professor Amos Rapoport's urban settlement environment-behaviour research, that 'every effort should be made to ensure the establishment of homogenous Pacific Island communities and neighbourhoods in [state] housing [areas].' This is significant because the design case study of this thesis seeks to work with, and provide for, the existing demographic groups of the Otara area – particularly given the failure of 'previous policies of pepper-potting and heterogeneous integration' of Pacific peoples (Cayford, 2009, p. 17). However, while these findings can be conceptualised in terms of spatial form, the allocation of dwellings to Pacific peoples within this area – social engineering to a certain extent – is beyond the scope of this research.

## **Pacific Housing & Urban Design Principles**

In addition to those developed by HNZC, and the regenerative design strategies established earlier in this thesis, this research has identified principles of housing and urban design for Pacific peoples that will be conceptualised through the design case study. These principles are intended to aid and sustain social and cultural connections for Pacific peoples in a New Zealand context. Some features of indigenous Pacific housing and urban layout cannot be directly adopted for a number of reasons. This is because they are converse to the existing structure of New Zealand suburbs, they go against the findings of the earlier case study fieldwork and redevelopment examples, and deny the fact that HNZC must provide flexible dwellings for a variety of demographic groups – not just Pacific peoples. However, underlying principles can still be distilled and translated. These include the following:

### *Community Space*

Open and built, which could operate as a central focal point for the greater area, or sub-areas within it, reflecting indigenous Pacific malae and communal space. Surrounded by housing, such space could provide for both special occasions and everyday life, while facilitating socio-cultural interaction and fostering community. However, such space must acknowledge that its provision alone will not automatically create these relationships. Additionally, it could also incorporate community garden space.

### *Extended Pacific Identity*

Within the urban realm this could include landscaping, amenity, and public space design, and be achieved through materiality, colour, and detailing. With regards to dwellings, redevelopments could reference certain features of indigenous Pacific housing, such as the dominant roof and exposed timber structure.

### *Boundary Conditions*

While the absence of boundary fencing is one of the most significant examples of how indigenous Pacific housing and urban design cannot be directly adopted to a New Zealand context, nor meet HNZC's requirements for flexibility for a range of demographic groups, a compromise which aligns with these and the earlier fieldwork findings and design strategies is the use of 'low, medium or permeable' fences at the front of dwellings. Such fencing would enable a connection with the street (public space) and adjacent dwellings to be created.

### *Personalisation*

Dwelling and section landscape design could allow a degree of temporary tenant personalisation to denote a certain sense of ownership.



## **Chapter Five – Section Three**

### ***Otara Regenerative Design Case Study***

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## Foreword

This thesis has established that many post-war suburban state housing areas in New Zealand have evolved little from their original establishment and are now inadequate and undesirable. In addition, contemporary and future housing demands mean that there is significant pressure on HNZC to not only provide dwellings in the right locations and condition, but to also provide the right types of housing for a range of demographic groups (Housing New Zealand Corporation, 2011a). The design case study examines the regenerative design strategies established earlier in this thesis as ways to address these issues. It also examines principles of housing and urban design for Pacific peoples, responding to the cultural make-up of the Otara area, as well as the fact that they account for a quarter of all HNZC tenancies, yet have previously been marginalised.

Although the design case study is hypothetical, it is intended to have real-world application, and while it is site-specific, its principles can be adapted to other post-war suburban state housing areas in New Zealand. In contrast to other contemporary state redevelopment examples, it is larger, and, responding to site-specific conditions, it explores the potential of reallocation and modification of land in state ownership currently outside of housing use, such as schools. Similarly, it examines the potential of full or partial state acquisition of privately owned properties – acknowledging that while this does happen under the Public Works Act 1981, it can also be a barrier or a complication to such work.

The following four sections explain the proposed design. The first section describes the reasons for choosing the design case study area and the design brief, while the second, third and fourth describe significant design decisions at three distinct, but inter-related levels – master planning, intermediate-scale urban design, as well as dwelling additions and alterations. The design strategies and design case study are then discussed in the concluding chapter.

## Design Case Study Area Selection

While alternative sites including Porirua, Pomare, and Mangere were considered, Otara was chosen as the design case study area because of the following reasons:

- The area has a high concentration of state-owned properties. According to the *New Zealand State Housing Dataset 1936-2010*, as of February 2010, HNZC owned 487 dwelling units in Otara North and West combined (Motu Economic and Public Policy Research, 2011). Statistics New Zealand's 2006 *Census of Population and Dwellings* states that the total number of dwelling units in these areas was 990, meaning that theoretically HNZC owned nearly half of them.
- As of June 2011, HNZC identified the suburb as having the second greatest number of people in 'serious,' 'significant and persistent' housing need in the country (Priority Eligible – B), with 329 people out of 3,352 nationally<sup>14</sup> (Housing New Zealand Corporation, 2011b).
- Many of the state-owned properties in the area are inadequate. While the number of bedrooms per dwelling unit in Otara North and West combined ranges from one to seven, the average is only 2.81 (Motu Economic and Public Policy Research, 2011). Consequently, given that the average household size within these areas combined is 4.75 people (Statistics New Zealand, 2006), many of the dwellings are overcrowded. In addition, there is little variety in the dwelling types as most are of the post-war era.
- The slightly undulating area is relatively low density (8.35 DU/ha gross – within the defined site bounds), is well serviced by public transport, and has a range of existing amenities including schools and tertiary institutions; recreational, religious and cultural facilities; as well as retail, commercial and industrial zones. It is defined by the Otara suburban centre to the south, and a public reserve to the north, east and west, which incorporates Otara Lake and Creek – a cooling reservoir system for the Otahuhu Power Station. However, this waterway is contaminated, and the public reserve, as well as some of the existing amenities, are poorly integrated with the surrounding area, to its detriment.
- Finally, the properties and their suburban environments have developed little from their original establishment, and have been historically troubled and criticised.

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<sup>14</sup> Due to the length of time that the regeneration project could take, this figure does not incorporate those people in 'Priority Eligible – A' whose 'at risk,' 'severe and persistent' housing need must be addressed immediately (Housing New Zealand Corporation, 2011b).

## Design Brief

Based on the aforementioned issues, Otara is a prime candidate for regeneration. In addition to examining the regenerative design strategies established earlier in this thesis, and the principles for Pacific housing and urban design, the design case study aims to address these site-specific issues by:

- Providing 70 additional dwellings, as well as further dwellings over time.

*Justification:* Based on the average household size in Otara North and West combined, approximately 70 additional dwellings must be provided to meet current housing demand. More dwellings must also be provided over time to accommodate predicted future demand. However, without supplementary dwellings also being allocated to private or community sector housing, this provision of dwellings would only reinforce the current high concentration of state-owned dwellings in the area.<sup>15</sup> Such concentration is contrary to HNZN's objective to improve social outcomes through the provision of mixed-tenure housing (Housing New Zealand Corporation, 2010, p. 31).

- Reinforcing the range of dwelling sizes, as well as diversifying the types of dwellings.

*Justification:* Again, based on the average household size of the area, as well as the demographic groups HNZN has identified as in greatest housing need, the range of dwelling sizes in the area must be expanded to more adequately provide for these groups. The types of dwellings must also be diversified.

- Improving properties and the suburban environment.

*Justification:* The recent *Otara Community Advocacy Plan* sets out a number of initiatives to improve the area, which the design case study seeks to build on. Such initiatives include park and street plantings, as well as restoration and remediation of the Otara waterways (Otara Community Board & Manukau City Council, 2008).

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<sup>15</sup> With supplementary dwellings allocated to private or community sector housing, it is intended that improvements resulting from regeneration could create demand for housing in the area.

## Otara Aerial Photograph

750m Radius – 1:10,000



Figure 94.

Otara Suburban Diagram  
750m Radius – 1:10,000

Figure 95.





## Otara Ownership Diagram – Defined Site Bounds

1:10,000



Figure 96.





Bound by a public reserve to the north, east, and west, the Otara design case study area is irregularly structured around three primary roads that run north-south off a southern collector road. Secondary roads connect the primary roads and also provide access to cul-de-sacs. This street network results in a number of large, poorly connected blocks. This issue is only further reinforced by the presence of three prominent features that occupy large, central sites, yet poorly integrate with the surrounding area. These sites include:

- Sir Edmund Hillary Collegiate Primary and Intermediate – a split campus state school.
- Manukau Institute of Technology – a government tertiary institution that includes an heritage building and an heritage Phoenix Palm.
- Three large sections designated as ‘Maori Purpose’<sup>16</sup> areas – one of which also includes an heritage building, while another includes a Kokiri (Skills Training Centre). All three sites are in state ownership.

Such a large tract of state-owned land within a suburban area is significant to the proposed design. However, it is not an anomalous for many post-war suburban state housing areas, as exemplified by the earlier case studies. This gives plausibility not only to the extensive regeneration of the Otara area, but also to other state housing areas in New Zealand.

Two significant design decisions were made at the master planning level in response to the design brief and site-specific issues. A number of privately owned properties were affected by this work. While the design case study examined ways that regeneration could have a limited effect on privately owned properties – including by integrating around them; at the same time, as a hypothetical project, it also examined the potential that full or partial state acquisition of privately owned properties could have. Overall, 29 privately owned properties were fully acquired, and 21 were partially acquired. Without acquiring these properties, a number of the large-scale interventions and design strategies would have been compromised or unachievable.

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<sup>16</sup> The Manukau District Plan states that ‘Maori Purpose areas allow opportunity for Maori whose tribal links are outside Manukau (taurahere) to establish with some certainty, Maori cultural institutions and participate in activity that reflects Maori customs and values’ (Manukau City Council, 2002).

### *Suburban Structure, Connectivity & Intensification*

The first design decision was to reconfigure the existing street network and plot structure to improve connectivity and increase dwelling density and diversity. Connectivity was improved using the methods established in the earlier design strategies, including extending cul-de-sacs to form through roads, and creating tertiary streets within or through existing blocks. Pedestrian connectivity was improved by providing structured pathways through the intermediate school and tertiary institution.

Dwelling density and diversity was also increased by the methods established in the design strategies, which are closely interlinked with those of suburban structure and connectivity. The modified street network provided an opportunity to reconfigure existing plot structure and incorporate both new and relocated dwellings. The new dwellings are a medium density model based on Designgroup Stapleton Architects' Ventura Street scheme and are located near existing amenities and public transport connections that can effectively provide for demographic groups such as the elderly and disabled.

Relocated dwellings were incorporated in different ways throughout the design case study area. While intensification of narrow or small blocks, or areas with a high percentage of privately owned properties was often deemed to be ineffective; elsewhere, large, underdeveloped state-owned sections were able to incorporate relocated dwellings in rear, tandem and multi-lot subdivision arrangements. Another intensification strategy reduced section sizes of both state and privately owned properties by shifting their rear boundaries to enable more space within blocks for regeneration. This was justified as the average distance between these dwellings and their rear boundaries was approximately 20 metres, which could be more effectively used.

Overall, 102 additional dwelling units were incorporated. This increased the overall site density by 1.36 DU/ha gross, to 9.71 DU/ha gross. Localised density increases were more significant; however, current housing demand was accommodated, as well as additional dwellings for private or community sector housing. Three sites were also identified for potential future development. These include:

- A greenfield site on the western edge of the design case study area. The existing street network could easily be extended to incorporate this site.
- An existing site adjacent to the southern collector road. This site was not redeveloped as part of the design case study because it is well-established with medium density housing. However, the large, multi-unit dwellings that exist on the site are an unpopular mode of state housing. In addition, they are dated and difficult to modify. Regeneration of this site could achieve a higher dwelling density and improve connectivity.

- Two 'Maori Purpose' zoned sections on the eastern side of the design case study area could also be developed. Such development could be based on a HNZC 'Papakāinga' Maori housing model which could align with the site's intended zoning.

Higher density dwelling models – such as 2/3 storey accommodation halls for tertiary students – could also be incorporated.

### *Suburban Integration & Public Spaces*

The second design decision, developed in concert with the first, was to reconfigure a number of existing features to better integrate them with their suburban environment. Several new features were also incorporated.

The public reserve that envelops the design case study area is one feature that is poorly integrated with its suburban environment because many dwellings back on to it, and large blocks prevent access to it. This issue translated into a desire to draw the natural feature across the site, which was not only reinforced by the limited extent of existing landscaping within the area, but also the cultural attitudes of Pacific peoples towards openness and connection with nature. Improved integration and its incidental benefits were facilitated in various ways including the modification of the street network, as well as the adaptation of other features, as described in the ensuing paragraphs. These enabled a collection of landscaped open spaces to be created.

Like many of the public inner-block reserves identified in the earlier case study fieldwork, the primary and intermediate schools of the design case study area suffer from what Clark (2010, p. 91) describes as 'poor street presence, as well as being located in the centre of a superblock.' These issues were addressed by removing sections of perimeter housing that enabled the schools to open out to, and engage with each other, as well as the surrounding area. This created a central openness within the suburb that forms a connection across the site with the peripheral reserve. The larger school sites were reconfigured, and the intermediate school was reduced in size. Surplus land was allocated to housing and a new central community area, which is described in the following intermediate-scale urban planning section. This was justified as the intermediate school has 4.86ha for 244 pupils, while the primary school has only 2.18ha for 465 pupils (Education Counts, 2011a, 2011b). This is another example of where large sites could be more effectively used.

A number of new parks were also integrated throughout the area, that extend the connection with the peripheral reserve. Encircled by housing, these parks are conceptualised as malae space for Pacific peoples, enabling socio-cultural connections to be made and maintained. Each park includes open space for special occasions and everyday life, as well as community garden space, which could act as nurseries for the on-going improvement of properties in the area. However, the parks were not designed

to be exclusive; rather, by retaining the general language of a suburban park, different people can view them in different ways – the aim is to foster community, much like the ‘Homezone’ of the Ventura Street scheme.

In another sense, the parks can be seen as a reconceptualisation of post-war planning – the same size block has been reconfigured, increasing connectivity, dwelling density and variety, and in this case new parks have been incorporated. Alternatively, existing public inner-block reserves could be modified. Bound by tertiary streets, these new parks have clearly-defined boundaries between public and private space – a technique used elsewhere in the master plan. The surrounding housing also overlooks the parks rather than backing on to them, reducing the risks of creating an internalised and potentially problematic environment.

### *Suburban Character & Heritage*

As previously described, Otara suffers from compromised and criticised post-war planning, as well as a lack of evolution from its original establishment. Regeneration of the area posed an opportunity to address these issues and make a number of improvements, which consequently altered its character. However, where possible and appropriate, this work remained sympathetic to existing conditions. For example:

- Suburban structure and hierarchy were retained and added to, as were existing amenities.
- Similar suburban conditions were maintained and while density was increased, it was not done in a drastic manner.
- Similar set-backs from the street and between dwellings were maintained, particularly where new or relocated housing met existing housing.
- New dwelling types and sizes were similar to those existing, as was the siting of these and relocated dwellings.
- Variation in character was achieved by establishing certain streets as particular dwelling types, rather than heterogeneously mixing them throughout the area.
- The new central community building was sized and articulated to relate to the schools and tertiary institution, as well as the surrounding dwellings.
- Landscaped open areas and streetscapes build on those existing and engage the peripheral reserve as well as other features, while referencing the area’s history.

*Central Community Area*

As previously mentioned, a central community area was established within the design case study area. The purpose of this was to provide a focal point for the suburb that would support a multitude of uses and benefit the community as a whole. It was also intended to signify a new chapter for the area that reflects the regeneration process it has undergone, as well as its potential for further development. Bookended by two prominent buildings – a new community facility to the east, and an extended block of shops to the west – the community area is a large, structured public space, which is another feature that forms a connection with the peripheral reserve. Through a mixture of uses and users, the community area also forms a connection between the schools, tertiary institution, and surrounding area.

The community area was designed to reflect the cultural practices of Pacific peoples, both in terms of communitarian life and artistic expression. While the Pacific design elements and their associations are there to be read, they were not designed to be exclusive or explicit. From east to west, features of the central community area include:

- A spine pathway that is flanked by landscape features, connecting the community centre and shops.
- A car park adjacent to the community centre that is intended to double as a space for activities such as markets. It is also intended that large community activities could spill on to the adjacent intermediate school site.
- A cross-axis pathway that forms a linear connection with open spaces to the north and south. Where the two pathways intersect, public art is featured.
- A level grassed space and children's playground.
- A shaded seating area adjacent to the shops.

Influenced by the geometric patterns of tapa cloth, the design of the community area seeks to extend Pacific identity, and is based on a structure of squares which are intersected to form triangles. This pattern is expressed in various ways throughout the design including by defining areas of use; as alternating sections of different types, colours, and textures of plants and hardscaping; or simply as articulated lines in the hardscaping. Although not designed, the community centre could utilise similar attributes.

Finally, the design of the community area was informed by CPTED principles. It is well structured with clearly denoted access points, and is overlooked by housing, as well as the adjacent streets, shops and community centre. These amenities also provide spill-lighting in addition to pathway and street lighting.



### *Property Structure & Relationships*

The proposed design has a wide effect on properties, including those in state ownership which are otherwise unaffected by the regeneration process. Each of the regenerated properties includes:

- Improved site structure through incorporating decks or patios, driveways, sheds, and carports or garages. Carports or garages could be adapted by tenants to enable different temporary uses.
- Site-appropriate landscaping that could incorporate a degree of tenant personalisation, and could work in concert with the community gardens dispersed throughout the area. This landscaping should be able to be easily maintained and would not only contribute to the character of the area, but also provide opportunity for tenants to benefit from it for example, through the incorporation of vegetable gardens.
- Definitive and appropriate boundary conditions. The use of reduced street boundaries such as 'low, medium or permeable' fencing enables communitarian connections to be formed with neighbouring properties, as well as the street (and public spaces beyond in some cases), while not compromising property demarcation. This also enables passive surveillance, yet provides privacy to the rear of the properties.

Additions and alterations to existing and relocated post-war state houses provided an opportunity to reinforce the range of dwelling sizes in the design case study area. It also provided an opportunity to modernise dwellings, address cultural requirements, and attend to their previously described shortcomings and criticisms.

Four standalone state houses from the area were used as exemplars in the design case study. The houses varied in layout, orientation and size; however, in terms of planning, each was altered in a relatively consistent manner according to the design strategies and Pacific housing principles established earlier. It is intended that other state houses in the area would be similarly regenerated. It should be noted at this point that although a series of dwelling appearances are suggested, the design case study is intended more as a planning exercise. The following sections describe the designs and the process of demolition, alteration and addition that each of the exemplars underwent in order to meet contemporary and future housing demands.

### *Planning*

The traditional separation of the lounge from the kitchen and dining area in the exemplars was one of the first aspects to be addressed. By reconfiguring rooms and removing walls, flexible, open-plan living areas were created either within, or as rear additions to the existing dwellings. This improved the solar orientation of many of these rooms in the exemplars, while it also improved the distinction between public and private areas. At the same time, the traditional lack of indoor/outdoor connection was also addressed by incorporating doors from the new living areas to outdoor living spaces. These design interventions enable the exemplars to better respond to New Zealand's environmental conditions and way of life, as well as the culture of Pacific peoples.

Additional bedrooms were incorporated in each of the exemplars. With the reconfiguration of rooms to form open-plan living areas, bedrooms were created in the place of former lounges or kitchen/dining areas, or as additions to the existing dwellings. Each bedroom features a built-in wardrobe, and is well-sized to accommodate a variety of uses.

Additional bathrooms were also added in each of the exemplars in response to the increased household sizes. Ensuites were incorporated with the master bedrooms, while existing bathrooms were updated, and in some cases, altered as a result of other plan modifications.

Alterations to the structure of the existing dwellings were limited. Loadbearing walls were predominately unaltered, however, where they were modified, roof beams or lintels were incorporated. Additionally, new walls did not intersect existing windows;

however, some windows were removed due to internal alterations. These existing windows are reused in some of the exemplars, in particular where new rooms such as ensuites were formed within the existing dwelling. In a few examples, improved indoor/outdoor connectivity was facilitated by incorporating new doors in the place of existing windows. This limited structural alterations.

Formed as extensions of existing hallway axes, additions to the dwellings were similarly limited in effect. Existing perimeter walls were retained and re-clad to create interior walls, while the roofs of the additions had little or no effect on existing roofs.

In some instances, laundries were incorporated in cupboards rather than as separate rooms to economise space, allowing for other plan modifications.

Front porches were retained as they offer a covered transitional space, which is of particular significance because the exemplars only have small eaves overhangs.

### *Form & Appearance*

Akin to the majority of the earlier private redevelopment examples, each of the dwelling additions is acknowledged as being more recent, however, they do retain aspects of the state house style. This was achieved in a variety of ways such as continuing foundation, wall and eave planes, as well as reusing original windows at a consistent or relative height to existing windows. While some of the examples depart from the well-established state house style, they are intended to be familiar to the New Zealand suburban experience to mitigate some of the adverse reactions to past models.

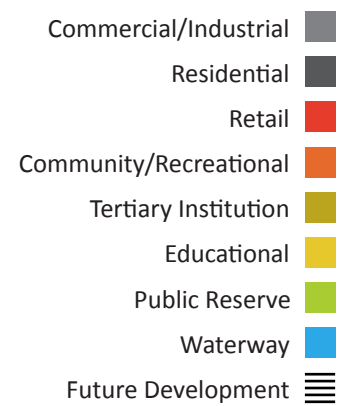
Pacific housing design principles also informed some of the designs. Features such as prominent roof forms and exposed timber structure reference indigenous housing. Further development of the dwellings could address other aspects such as colour and materiality.

## Otara Suburban Diagram – Pre-intervention

750m Radius – 1:10,000



**Figure 97.** Pre-intervention suburban diagram illustrating the design case study area's large superblocks and poor connectivity. Note how the schools, tertiary institution, and enveloping public reserve integrate poorly with the area.



## Otara Suburban Diagram – Post-intervention

750m Radius – 1:10,000



**Figure 98.** Post-intervention suburban diagram illustrating the design case study area's improved connectivity and integration. Note how through reallocating land a central focus has been established, which brings together the various existing and new uses and users of the area. See also how a connection of open spaces has been created through the area, that would be reinforced by street planting.

## Otara Building Footprint Diagram – Pre-intervention

1:10,000



**Figure 99.** Pre-intervention building footprint diagram illustrating the relatively low density of the design case study area and the schools which sit inactive within blocks of perimeter housing.



## Otara Building Footprint Diagram – Post-intervention

1:10,000



**Figure 100.** Post-intervention building footprint diagram illustrating how dwelling density has been increased in the design case study area through a variety of dwelling models. Note also the openness of the central community area and its connection with other open spaces and uses in the area.





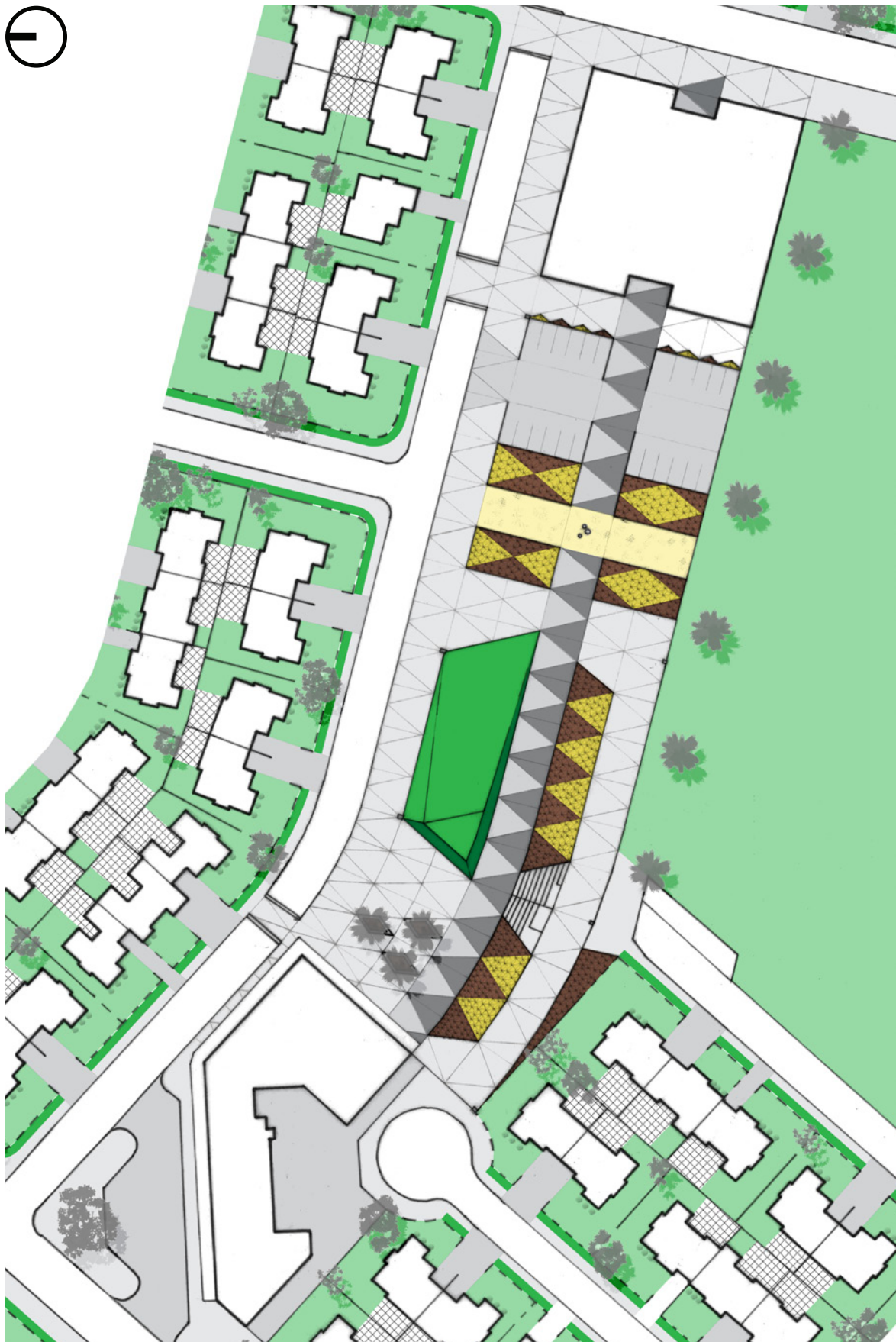


# Proposed Central Community Area Plan

1:1,000



Figure 103.





Proposed Central Community Area Perspective

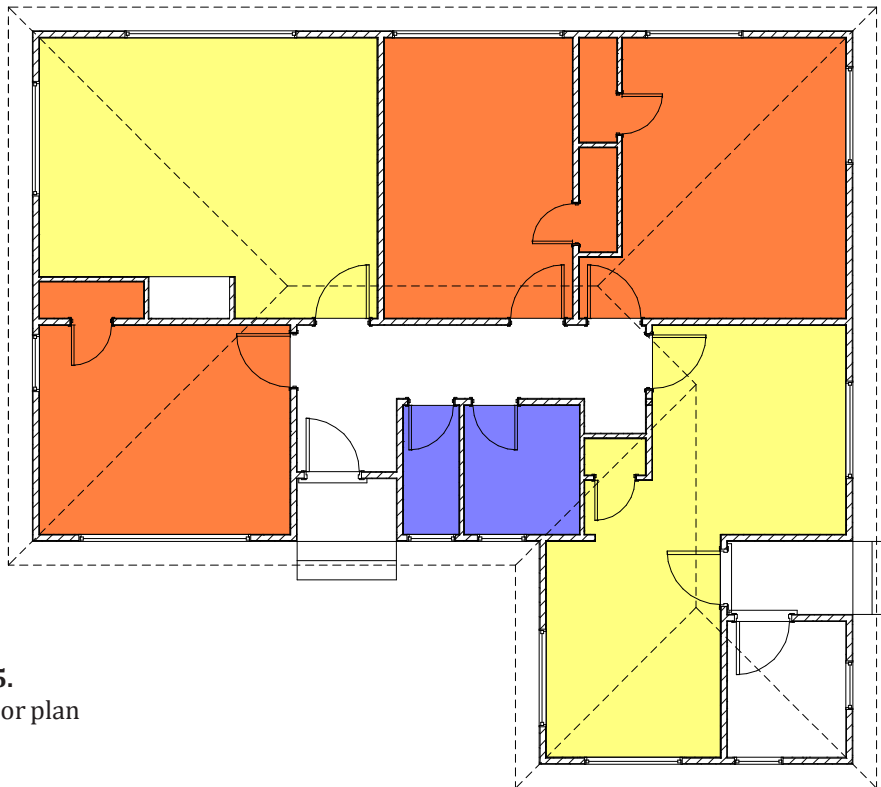
Figure 104.



## State House Redevelopment Example One

1:100

Each of the post-war state house exemplars was altered in a relatively consistent manner to address a number of the issues identified earlier in this thesis. Open-plan living areas provide flexible space and overcome the traditional separation of the lounge from the kitchen and dining room. Indoor/outdoor connectivity is increased through the use of doors onto outdoor living spaces. Additional bedrooms and bathrooms have been incorporated to facilitate the needs of larger families. Finally, the designs respond more acutely to New Zealand's environmental conditions and way of life, as well as the cultural needs of Pacific peoples.

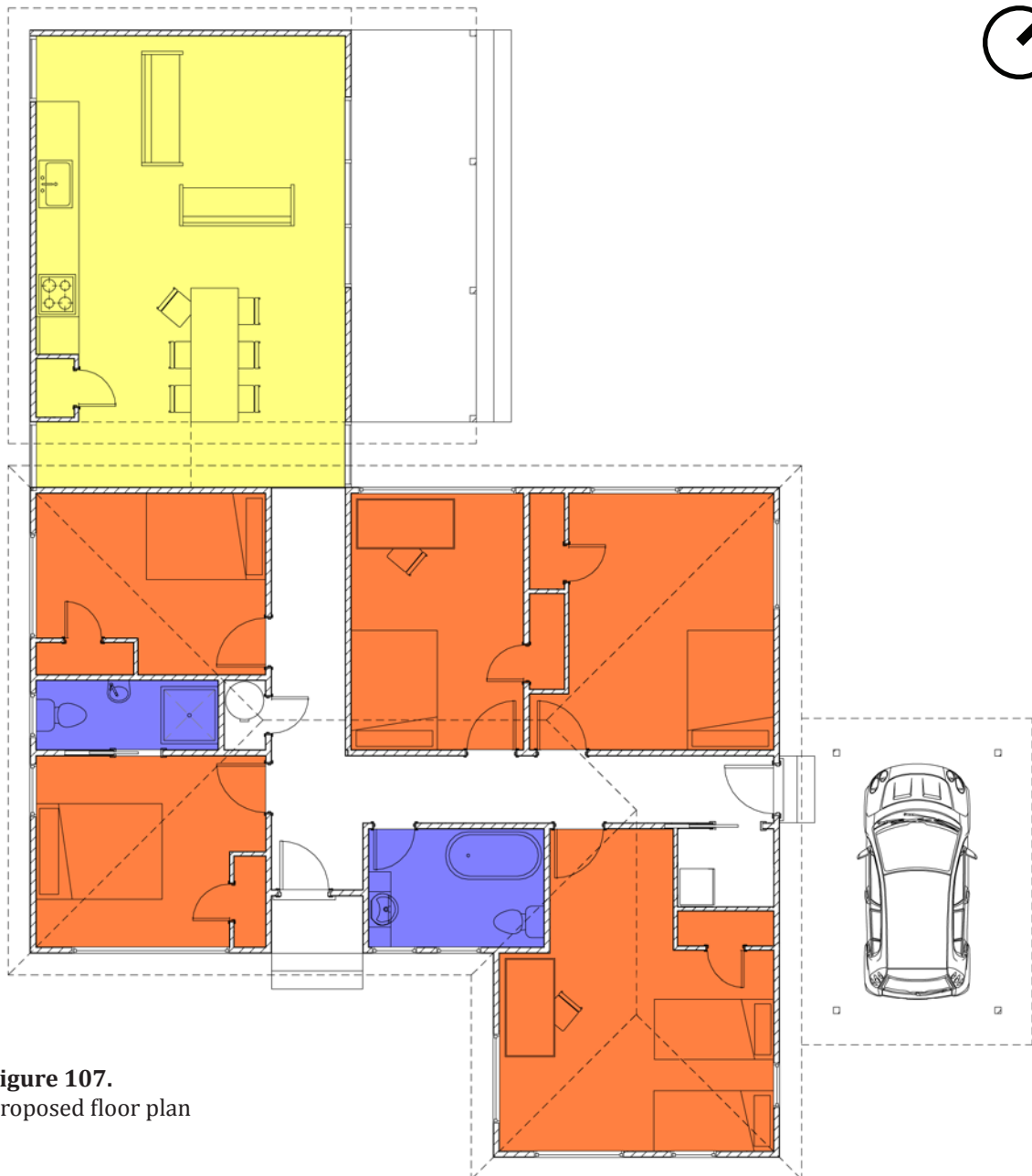


**Figure 105.**  
Original floor plan

**Figure 106.**  
Proposed north-eastern elevation

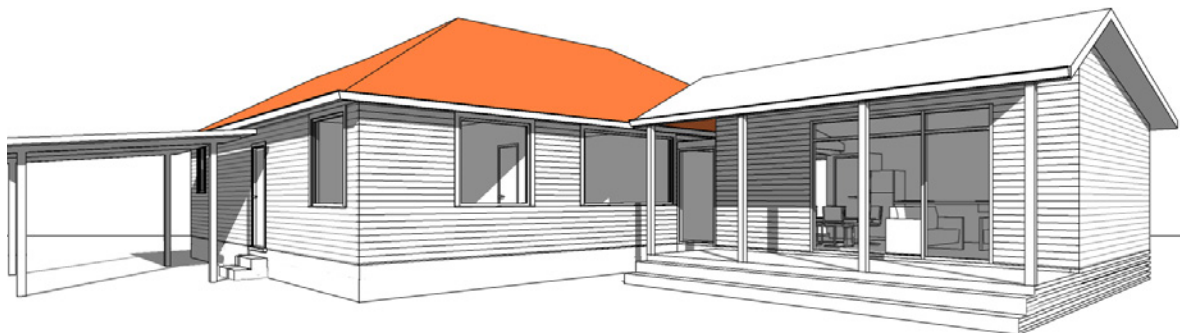






**Figure 107.**  
Proposed floor plan

**Figure 108.**  
Proposed perspective

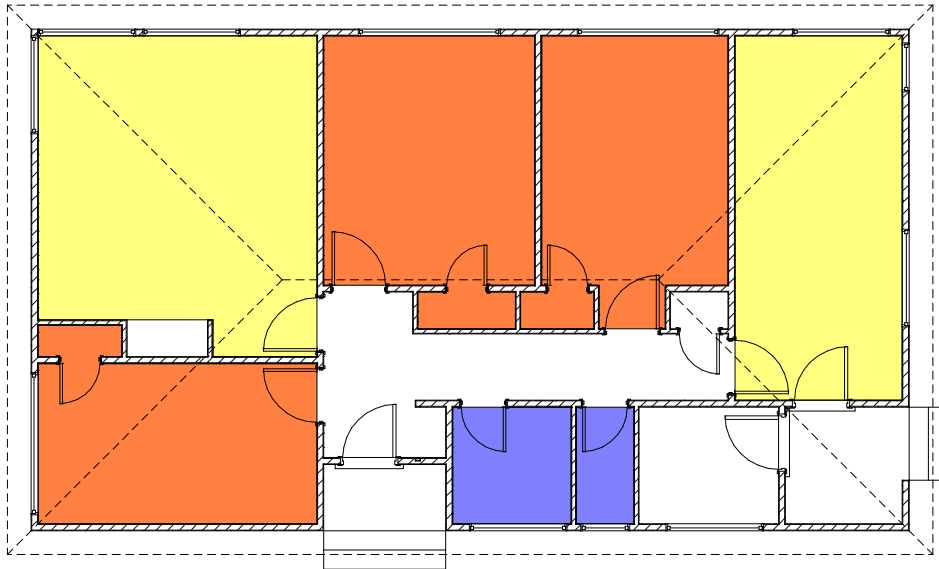


## State House Redevelopment Example Two

1:100



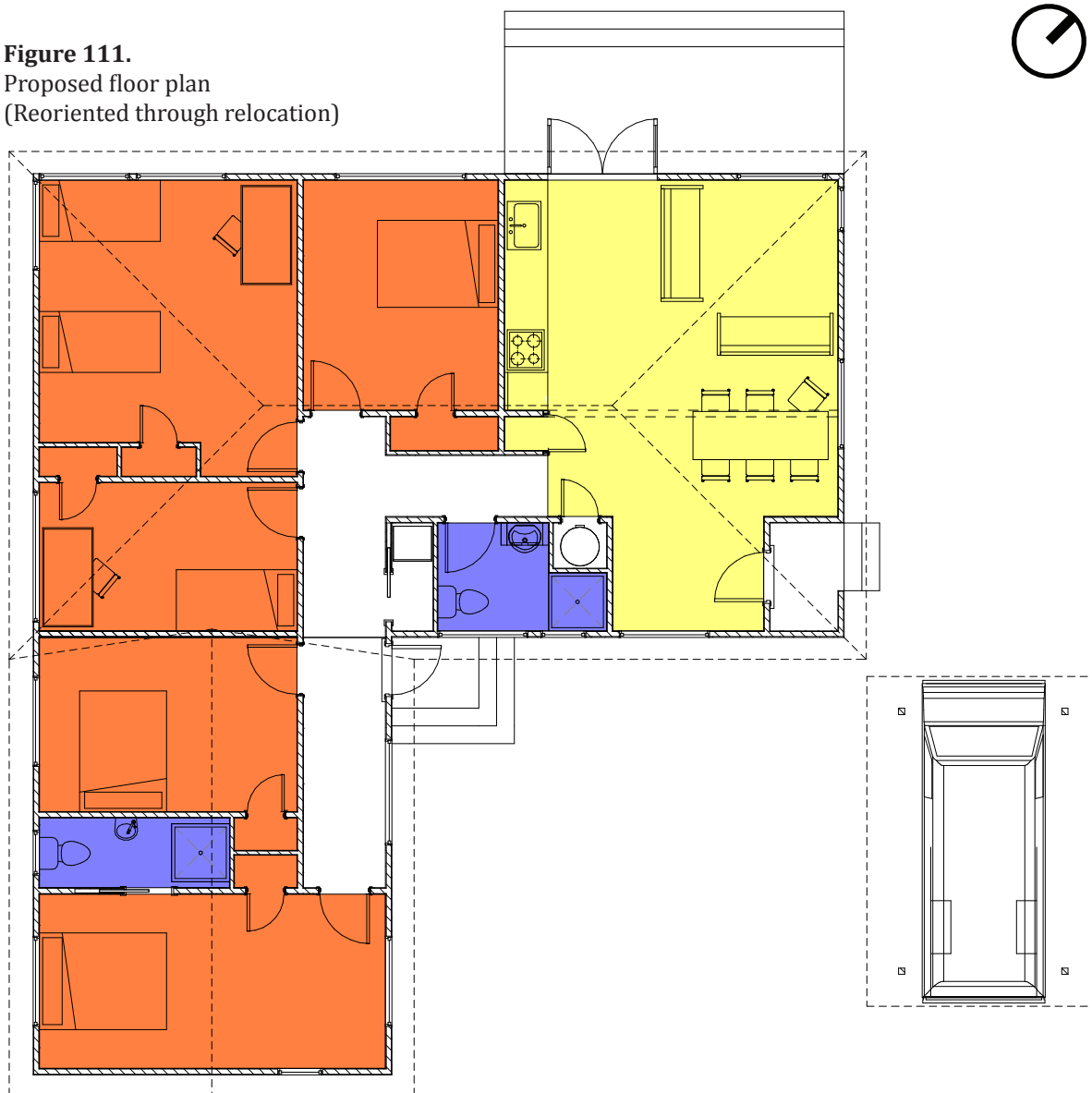
**Figure 109.**  
Original floor plan



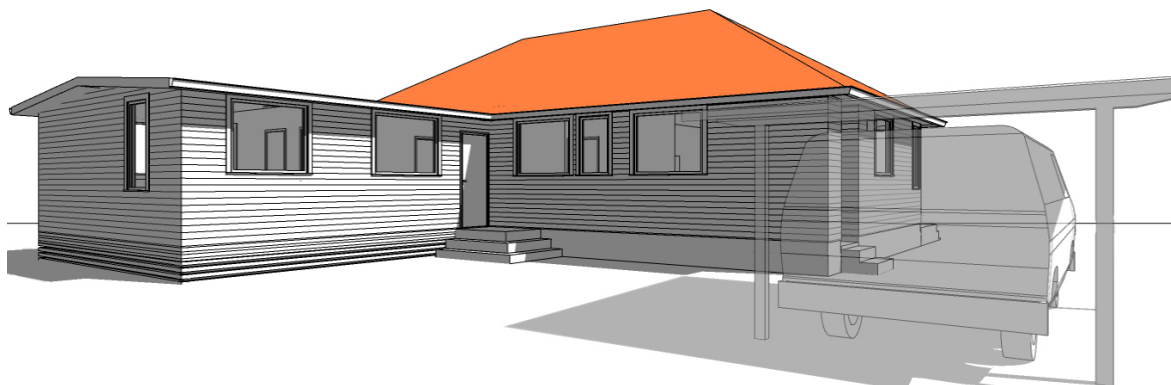
**Figure 110.**  
Proposed south-eastern elevation  
(Reoriented through relocation)



**Figure 111.**  
Proposed floor plan  
(Reoriented through relocation)



**Figure 112.**  
Proposed perspective

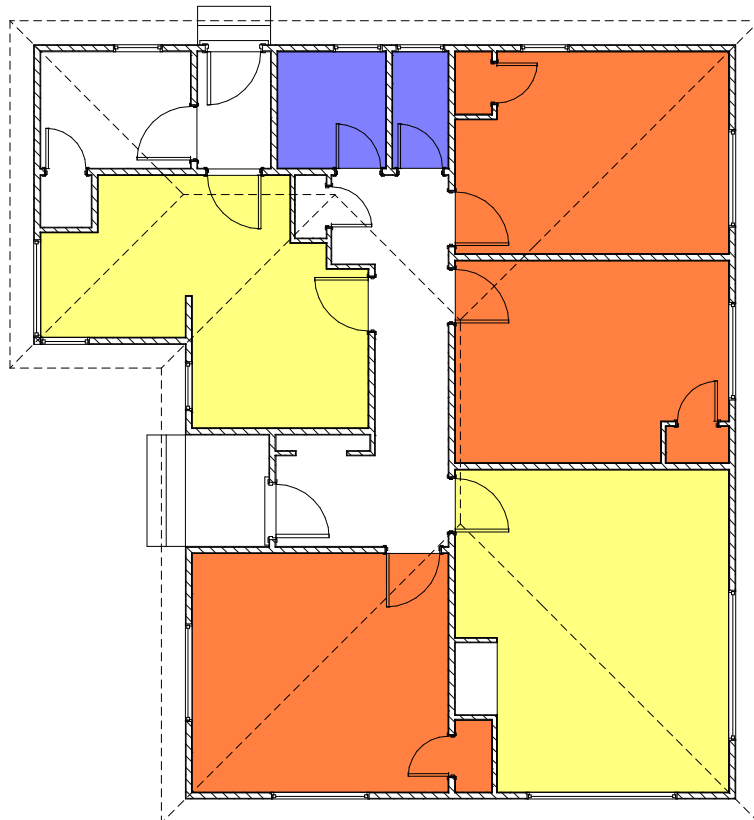


## State House Redevelopment Example Three

1:100



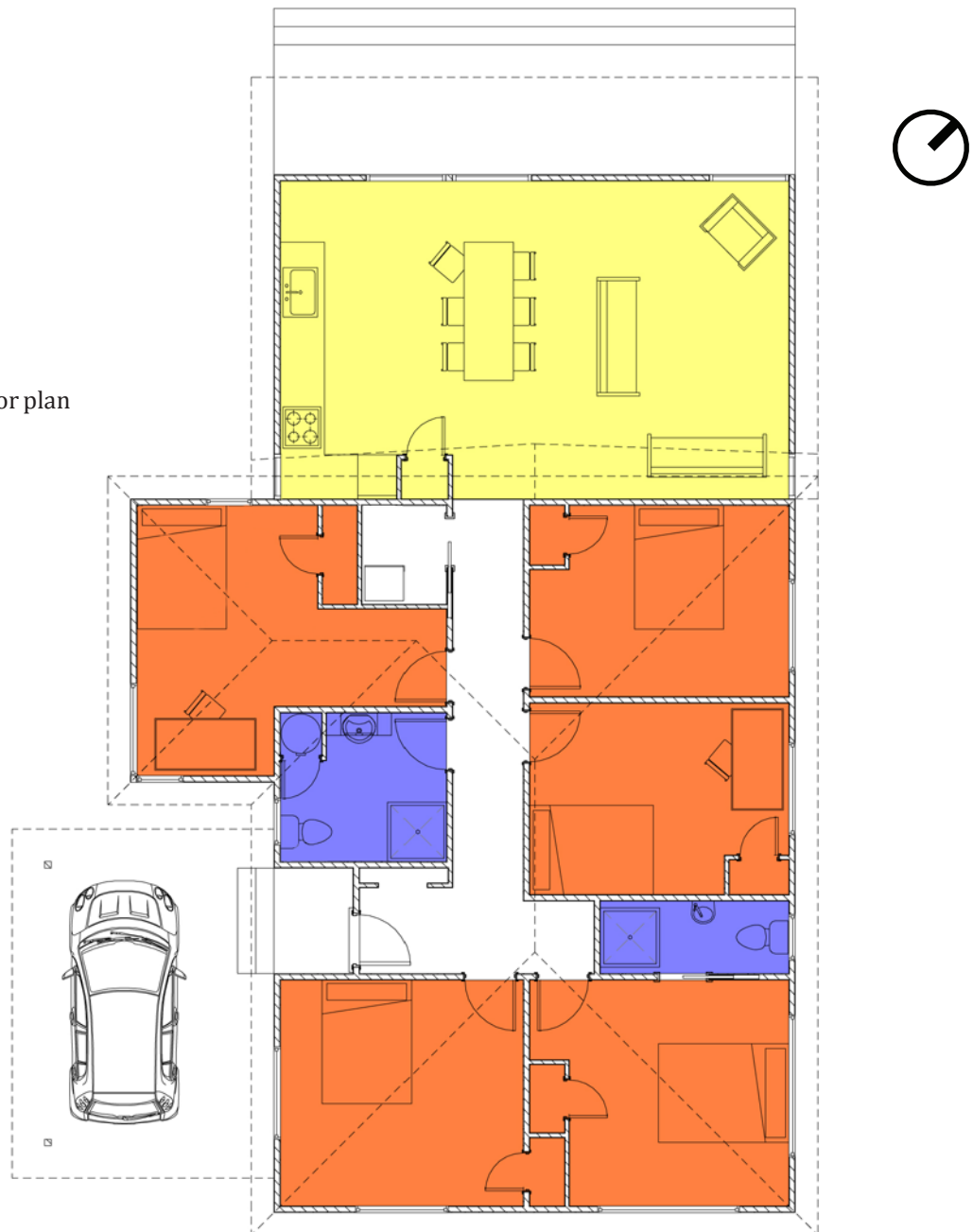
**Figure 113.**  
Original floor plan



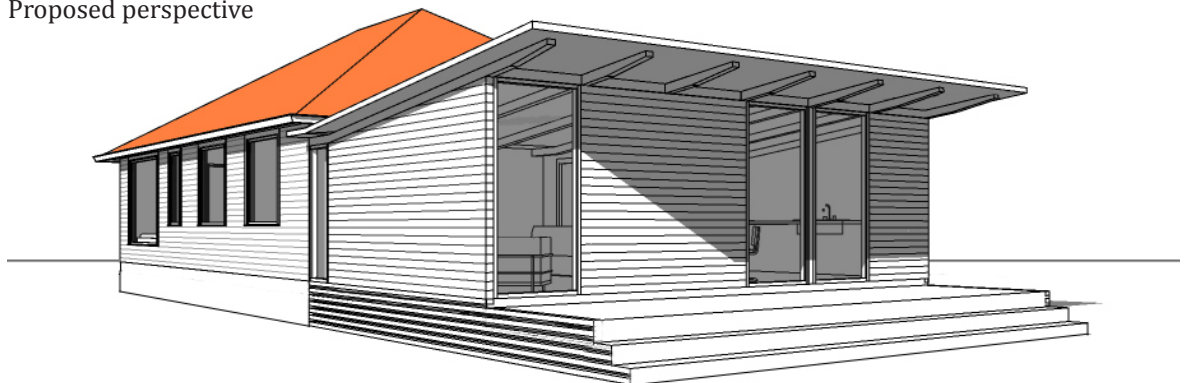
**Figure 114.**  
Proposed north-western elevation



**Figure 115.**  
Proposed floor plan



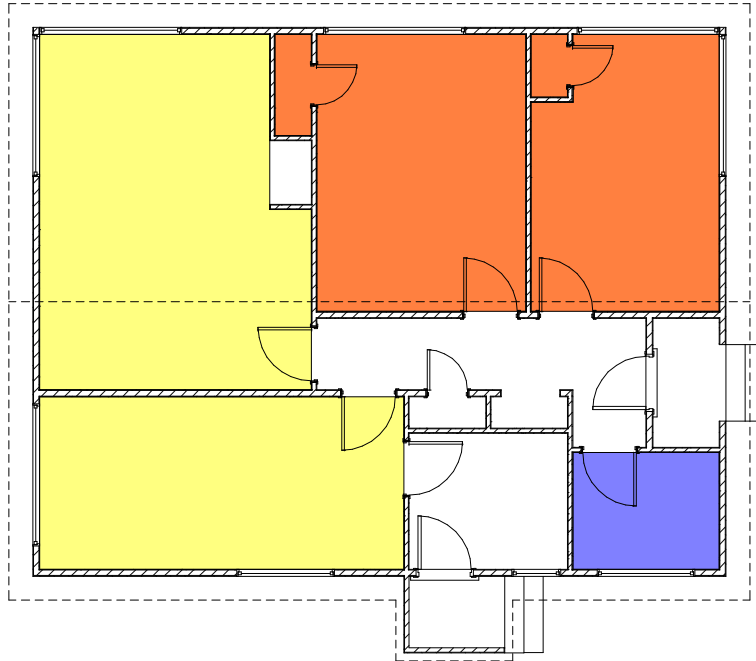
**Figure 116.**  
Proposed perspective



## State House Redevelopment Example Four

1:100

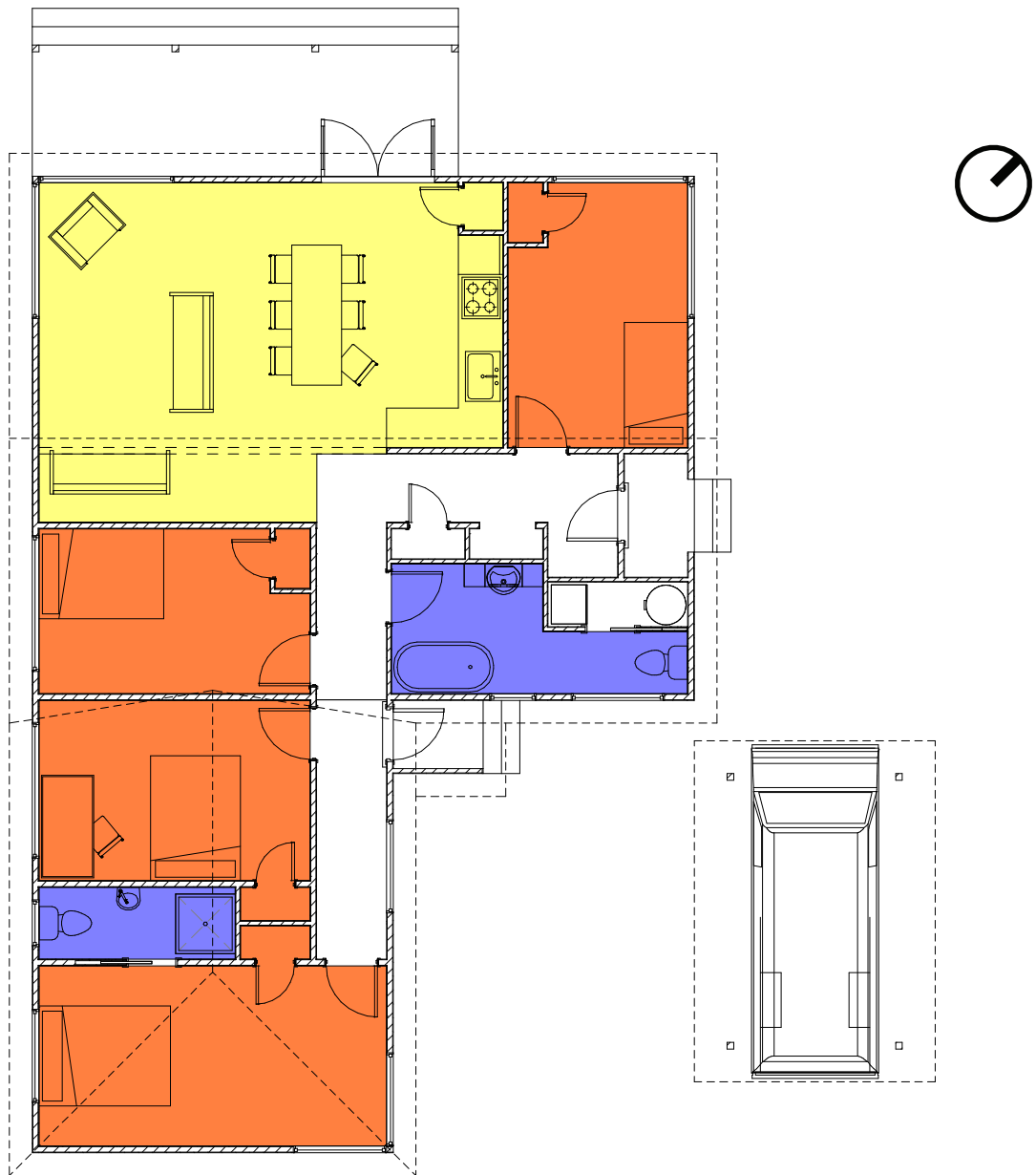
**Figure 117.**  
Original floor plan



**Figure 118.**  
Proposed north-eastern elevation

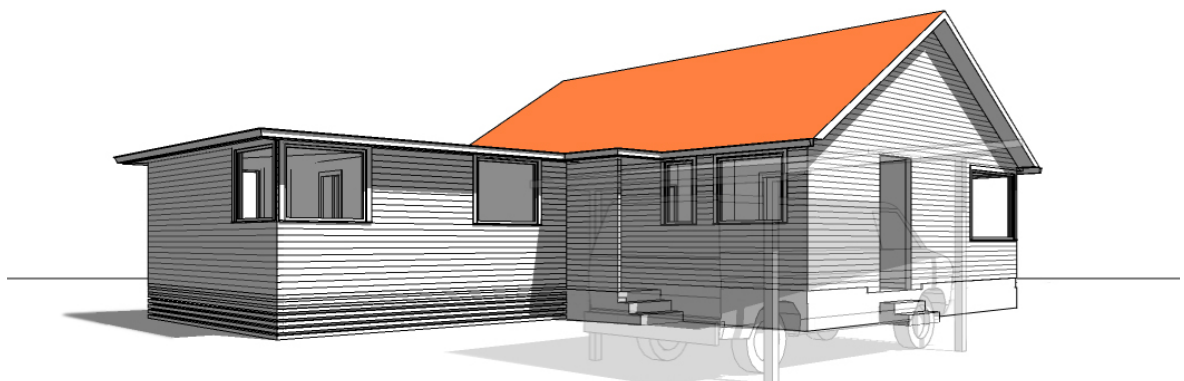






**Figure 119.**  
Proposed floor plan

**Figure 120.**  
Proposed perspective





## **Chapter Six**

### ***Discussion & Conclusion***

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## Discussion & Conclusion

This thesis has examined the urban and architectural design and the subsequent redevelopment, both private and state-initiated, of post-war suburban state housing in New Zealand. Through analysis of existing literature, case study fieldwork, and redevelopment examples, this thesis has identified the urban and architectural evolution of some of these areas and dwellings. It has shown how these areas and dwellings have been redeveloped to address their shortcomings and criticisms, residents' desires, societal changes, and contemporary needs. On the other hand, it has also identified the lack of evolution of other areas and dwellings, and the inadequate and undesirable environments that can result. Paired with the high current demand and predicted increasing future need for accommodation for lower socio-economic groups, as well as shifting housing demands, it is evident that the provision, maintenance, and improvement of state housing are significant issues for HNZC. Regeneration offers one way by which these concerns can be addressed, as explored through the regenerative design strategies and the subsequent design case study.

To reiterate, three main points have been made in this thesis. The first main point is the potential of regeneration of post-war suburban state housing to address contemporary and future housing issues facing HNZC. Regeneration acknowledges the original investment in post-war suburban state housing and its ability to continue to provide through a variety of improvements. The potential benefits of these regenerative improvements can be grouped into three categories – suburban environments, state properties, and state houses.

It has been identified that the regeneration of suburban environments can:

- Enable more efficient land use and reduce suburban sprawl.
- Enable higher dwelling densities and accommodate a variety of dwelling types and sizes.
- Improve pedestrian and vehicular connectivity.
- Provide safer, more functional, and aesthetically pleasing environments.
- Strengthen existing amenities and provide new ones.
- Respond to site-specific issues and different demographic groups.
- Sympathetically integrate with existing conditions.

It has also been identified that the regeneration of state-owned properties can:

- Incorporate new or relocated dwellings. Future research could examine the wider possibilities of tandem or multi-lot subdivisions.
- Improve boundary demarcation and the relationship between properties, as well as between properties and the street.
- Provide better site structure and incorporate sheds, garages or carports.
- Provide better landscaping – including elements such as vegetable gardens that the tenants could maintain and benefit from. Landscaping could also accommodate tenant personalisation, and denote a certain sense of ownership.

In addition, it has also been identified that the regeneration of state houses can:

- Incorporate additional bedrooms and bathrooms for larger families. The size of living areas can also be addressed.
- Improve efficiency and flexibility, as well as enable compliance with contemporary building codes.
- Address shortcomings and criticisms, and respond more appropriately to New Zealand's environmental conditions and way of life.
- Have limited effect on existing building structure and envelope.
- Respond to the varied needs of different demographic groups.

The second main point of this thesis is the potential of acquisition and reallocation of land to enable large-scale regenerative design strategies to be achieved in post-war suburban state housing areas in partnership with local councils and other agencies. This is distinct from the vast majority of previous HNZC redevelopments, which have been limited in both scope and scale. As established through this thesis, the full or partial acquisition of privately owned properties, as well as the reallocation of state-owned land currently outside of housing use, has numerous benefits. While these benefits are similar to those of the regeneration of suburban environments, they can be achieved more extensively. These include:



- Enabling more efficient land use and reducing suburban sprawl.
- Incorporating new housing or other uses.
- Improving pedestrian and vehicular connectivity.
- Improving the integration of different uses and amenities.

However, the ability to acquire and alter privately owned properties and other state-owned land is always going to be a limitation to such work. Consequently, further research could take a more conservative approach with minimal effect on properties and land. While this is similar to existing HNZN redevelopment projects, rather than being isolated to a small specific area, it could be done in a piecemeal manner, on a larger scale, to achieve similar objectives.

While acknowledging that HNZN must provide for a range of demographic groups, the final main point of this thesis is the potential of the urban and architectural design of post-war suburban state housing to be more culturally appropriate through regeneration. An example of this is the gap in existing HNZN guidelines with regards to urban design for Pacific peoples. This is a pertinent issue as Pacific peoples account for a quarter of all HNZN tenancies (Housing New Zealand Corporation, 2009, p. 20). Although not the focus of this thesis, this issue was addressed earlier, where it was shown that culturally responsive design principles can be achieved in concert with regenerative design strategies. It was also shown that culturally responsive design elements can be designed to be read in different ways by different people, and can therefore be beneficial to all. There is significant scope for further research into this issue, which could be concerned with Pacific peoples or other demographic groups. Such research could incorporate user input to get a more intricate understanding of cultural practices, values, and beliefs than this thesis was able to achieve.

There is also a second aspect to the potential of the urban and architectural design of post-war suburban state housing to be more culturally appropriate, which is concerned with New Zealand culture in general. 'Rooted in British feudalism,' the erection of English cottage-style state houses was criticised as they were "not New Zealand houses" (Schrader, 2005, pp. 90, 99), and were 'inappropriate for New Zealand's indoor/outdoor lifestyle' (Schrader, 2003, p. 44), as previously mentioned. However, their original investment, like their potential to continue to provide through improvement, was significant, and is the reason why they were regenerated as part of this thesis. Through the regenerative design strategies and design case study, it has been shown that open plan living areas can be created, and indoor/outdoor connectivity can be increased with ease. These improvements enable the dwellings to more appropriately respond to New Zealand's culture in general, as well as environmental conditions.

## Limitations

There have been a number of limitations to this thesis. One of the most notable limitations is that the economic cost of regeneration of suburban environments, state properties and state houses has been unable to be addressed due to the large-scale and numerous intricacies of what is, ultimately a hypothetical project.

To a certain extent, another limitation has been the top-down method of inquiry. While this method has been well-founded in expert analysis of existing literature, empirical fieldwork, and redevelopment examples, it is deficient in user input. This input, which is achieved through a bottom-up process, may have identified outstanding or subjective issues that could be of significance to the regeneration process. It could also have provided users with opportunity for investment in the process. However, again, as both a hypothetical and large-scale project, a bottom-up method of inquiry would have been difficult to execute, particularly without the backing of HNZN.

Despite these limitations, this thesis has identified the potential of regeneration of post-war suburban state housing through design strategies and the design case study. While state housing may never signify in every sense the 'very heart of the New Zealand dream' (Ferguson, 1994, p. 117), through regeneration it can, once again, be a certain benchmark for housing generally, and can continue to provide for the nation.





## *Bibliography & Appendix*

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## **Bibliography**

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- 'Alatani, M. N. (2004). *Housing and Related Social Conditions of the Tongan Community living in Otara*. (Master of Arts in Political Studies), University of Auckland, Auckland.
- Arps, J. (2011). *Rise and Ruin in Rata Vine - Rewi Thompson's Holistic Experiment in State Housing*. Paper presented at the Audience: 28<sup>th</sup> Annual Conference of the Society of Architectural Historians, Australia and New Zealand, Brisbane.
- Auckland City Council. (2011). Projects - Tamaki Edge Retrieved 9 October, 2011, from <http://www.aucklandcity.govt.nz/council/projects/tamakiedge/default.asp>
- Austin, M. (1976). *Polynesian Architecture in New Zealand*. (Doctor of Philosophy), University of Auckland, Auckland.
- Barrie, A. (2009). Rewi Thompson in Auckland Retrieved 25 July, 2010, from <http://www.architecture-archive.auckland.ac.nz/docs/block-digital/2009-02-Digital-Rewi-Thompson-Guide.pdf>
- Barrie, A., & Gatley, J. (2010). State Housing in Auckland Retrieved 25 July, 2011, from <http://www.architecture-archive.auckland.ac.nz/docs/block-digital/2010-Block-Digital-State-Housing.pdf>
- Bentley, I., Alcock, A., Murrain, P., McGlynn, S., & Smith, G. (1985). *Reponsive Environments: A Manual for Designers*. London: The Architectural Press.
- Bowman, I. (2008). *Translating the New Old-World into the New New-World - Reassessing Ernst Plischke's Plan for Naenae, Lower Hutt, New Zealand*. Paper presented at the The Challenge of Change - Dealing with the Legacy of the Modern Movement: 10th International Docomomo Conference, Amsterdam.
- Bowron, G. (2008). Tamaki State Housing Scheme. In J. Gatley (Ed.), *Long Live the Modern: New Zealand's New Architecture, 1904-1984* (pp. 44). Auckland: Auckland University Press.
- Boyce, S. (2010). *Only the Houses Remain: The Demise of the State Housing Scheme in New Zealand*. Paraparaumu Beach: Wayside Press.
- Bracey, S. (2007). Making Talbot Park a Better Place to Live. *Build*(100), 41-43.
- Butler, C. (2008). In My Neighbourhood. *Trends - Commercial Design*, 24(8), 18-21.
- Cayford, J. (2009). Appropriate Pacific Island Housing and Urban Design in South Auckland. Auckland: School of Architecture and Planning - University of Auckland.
- Chow, R. (2002). *Suburban Space: The Fabric of Dwelling*. California: University of California Press.



- Clark, K. (2010). *Hidden Territories: Integrating New Zealand Secondary Schools with their Suburban Contexts*. (Master of Architecture (Professional)), Victoria University of Wellington, Wellington.
- Collins, S. (2010, 7 July 2010). Huge sell-off of state houses planned Retrieved 9 April, 2011, from [http://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=10657035](http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10657035)
- Commission for Architecture and the Built Environment. (2000). *By Design - Urban Design in the Planning System: Towards Better Practice*. London: Thomas Telford.
- Crowe, T. (1991). *Crime Prevention through Environmental Design: Applications of Architectural Design and Space Management Concepts*. Boston: Butterworth-Heinemann.
- Davison, G. (1995). Australia: The First Suburban Nation? *Journal of Urban History*, 22, 40-74.
- Derby, M. (2010a). Suburbs - Life in the Suburbs Retrieved 29 June, 2011, from <http://www.teara.govt.nz/en/suburbs/4>
- Derby, M. (2010b). Suburbs - New Suburbs, 1950s-1970s Retrieved 29 June, 2011, from <http://www.teara.govt.nz/en/suburbs/5>
- Derby, M. (2010c). Suburbs - New Suburbs, 1950s-1970s - Otara Street, 1970 Retrieved 19 July, 2011, from <http://www.teara.govt.nz/en/suburbs/5/4>
- Derby, M. (2010d). Suburbs - The State Builds Suburbs Retrieved 2 May, 2011, from <http://www.teara.govt.nz/en/suburbs/2>
- Designgroup Stapleton Elliot Architects. (2011). Projects - Ventura Retrieved 3 August, 2011, from <http://www.designgroupstapletonelliott.co.nz/ap.php?o=projects/1237769158>
- Dutton, J. (2000). *New American Urbanism - Reforming the Suburban Metropolis*. Milano: Skira editore S.p.A.
- Education Counts. (2011a). Find a School - Sir Edmund Hillary Collegiate Junior Sch Retrieved 28 January, 2012, from <http://www.educationcounts.govt.nz/find-a-school/school/population?school=1251>
- Education Counts. (2011b). Find a School - Sir Edmund Hillary Collegiate Middle Sch Retrieved 28 January, 2012, from <http://www.educationcounts.govt.nz/find-a-school/school/population?school=1217>
- Ferguson, G. (1994). *Building the New Zealand Dream*. Palmerston North: The Dunmore Press Limited.
- Fill, B. (1984). *Seddon's State Houses - The Workers' Dwelling Act 1905 & The Heretaunga Settlement*. Wellington: New Zealand Historic Places Trust.

- Firth, C. (1949). *State Housing in New Zealand*. Wellington: Ministry of Works.
- Gatley, J. (2000). Going Up Rather than Out - State Rental Flat in New Zealand 1935-1949. In B. Brookes (Ed.), *At Home in New Zealand* (pp. 140-154). Wellington: Bridget Williams Books.
- Girling, C., & Helphand, K. (1994). *Yard, Street, Park: The Design of Suburban Open Space*. New York: John Wiley & Sons inc.
- Gray, J. (2004). *Housing an Extended Family in New Zealand*. Paper presented at the Social Policy, Research and Evaluation Conference, Wellington.
- Hamer, D. (1995). The Making of Urban New Zealand. *Journal of Urban History*, 22(6), 6-39.
- Housing New Zealand Corporation. (2002a). *Design Guide: Architecture*. Wellington: Housing New Zealand Corporation.
- Housing New Zealand Corporation. (2002b). *Ki te Hau Kainga - New Perspectives on Maori Housing Solutions*. Wellington: Housing New Zealand Corporation.
- Housing New Zealand Corporation. (2002c). *Pacific Housing Design Guide*. Wellington: Housing New Zealand Corporation.
- Housing New Zealand Corporation. (2009a, 4 April 2011). Community Renewal Programme Evaluation - April 2008 Retrieved 19 July, 2011, from <http://www.hnzc.co.nz/hnzc/web/research-&-policy/housing-research-&-evaluation/summaries-of-reports/community-renewal/community-renewal-programme-evaluation.htm>
- Housing New Zealand Corporation. (2009b). *Orama Nui - Housing Strategy for Pacific Peoples*. Wellington: Housing New Zealand Corporation.
- Housing New Zealand Corporation. (2010a, 4 November 2010). Home Leasing with Housing New Zealand Retrieved 9 April, 2011, from [http://www.hnzc.co.nz/hnzc/web/rent-buy-or-own/guaranteed-rent-through-home-leasing/guaranteed-rent-through-home-leasing\\_home.htm](http://www.hnzc.co.nz/hnzc/web/rent-buy-or-own/guaranteed-rent-through-home-leasing/guaranteed-rent-through-home-leasing_home.htm)
- Housing New Zealand Corporation. (2010b). Modernisation & Energy Efficiency Retrieved 27 May, 2011, from <http://www.hnzc.co.nz/hnzc/web/housing-improvements-&-development/property-improvement/modernisation-&-energy-efficiency.htm>
- Housing New Zealand Corporation. (2010c). *Statement of Intent 2010-13*. Wellington: Housing New Zealand Corporation.
- Housing New Zealand Corporation. (2011a). Design Guidelines Retrieved 3 February, 2012, from <http://www.hnzc.co.nz/about-us/our-publications/design-guidelines>

- Housing New Zealand Corporation. (2011b, 27 September 2011). Frequently Asked Questions about the Glen Innes Redevelopment Retrieved 10 December, 2011, from <http://www.hnzc.co.nz/councils-and-community-organisations/community-groups/tamaki-transformation-programme/glen-innes-redevelopment/faqs>
- Housing New Zealand Corporation. (2011c, 27 September 2011). Proposed Redevelopment to Increase Housing Options in Glen Innes Retrieved 4 October, 2011, from <http://www.hnzc.co.nz/about-us/news/proposed-redevelopment-to-increase-housing-options-in-glen-innes>
- Housing New Zealand Corporation. (2011d, 15 November 2011). Request for Expressions of Interest for the Pomare Redevelopment Project (Stage 2), Lower Hutt Retrieved 2 December, 2011, from <http://www.hnzc.co.nz/about-us/news/request-for-expressions-of-interest-for-the-pomare-redevelopment-stage-2-project-lower-hutt>
- Housing New Zealand Corporation. (2011e, 22 July 2011). Waiting List Retrieved 25 July, 2011, from <http://www.hnzc.co.nz/hnzc/web/rent-buy-or-own/rent-from-housing-new-zealand/waiting-list.htm>
- Hutt City Council. (2009). *Community Plan 2009-2019*. Wellington: Hutt City Council.
- King, M. (2003). *The Penguin History of New Zealand*. Auckland: Penguin Group.
- Koloto & Associates, New Zealand Institute of Economic Research, & Gray Matter Research. (2007). *Pacific Housing Experiences: Developing Trends and Issues*. Wellington: Centre for Housing Research, Aotearoa New Zealand.
- Maclean, C. (2009). Wellington Places - Consumers' Co-op Retrieved 18 July, 2011, from <http://www.TeAra.govt.nz/en/wellington-places/9/5>
- Manukau City Council. (2002). Manukau District Plan Retrieved 20 January, 2012, from <http://www.manukau.govt.nz/tec/district/default.htm>
- McAloon, J. (2010). Land Ownership - Early Pakeha Land Settlement Retrieved 7 June, 2011, from <http://www.teara.govt.nz/en/land-ownership/2>
- McClure, M. (2009). Auckland Region - Expansion: 1941-1979 Retrieved 23 July, 2011, from <http://www.teara.govt.nz/en/auckland-region/10>
- McClure, M. (2010). Auckland Places - South Auckland Retrieved 23 July, 2011, from <http://www.TeAra.govt.nz/en/auckland-places/16>
- McEwan, A. (2008). *The Houses of Hayes Paddock*. Hamilton: Ramp Press.
- McIndoe, G., McDonald, C., & van-Bohemen, C. (1995). *Wellington Inner City Residential Areas Urban Design Evaluation*. Wellington: Wellington City Council

- Ministry for Culture and Heritage. (2007). *Designing Communities - State Housing in New Zealand* Retrieved 23 July, 2011, from <http://www.nzhistory.net.nz/culture/we-call-it-home/designing-communities>
- Ministry of Justice. (2005). *National Guidelines for Crime Prevention through Environmental Design in New Zealand - Part 1: Seven Qualities of Safer Places*. Wellington: Ministry of Justice.
- Motu Economic and Public Policy Research. (2011). *New Zealand State Housing Dataset*.
- New Zealand Institute of Architects. (1972). *The Future of State Rental Housing in New Zealand*. Auckland: New Zealand Institute of Architects.
- Otara Community Board, & Manukau City Council. (2008). *Otara Community Advocacy Plan 2008-2010* Retrieved 26 July, 2011, from <http://www.towards2060.org.nz/assets/Resources/BackgroundDocuments/Otara6.pdf>
- Pollock, K. (2010). *City Parks and Green Spaces - Later Urban Parks* Retrieved 18 July, 2011, from <http://www.TeAra.govt.nz/en/city-parks-and-green-spaces/5>
- QV. (2011). *Property Reports and Valuation* Retrieved 17 April, 2011, from <http://www.qv.co.nz/>
- Rees, A. (2003). *New Urbanism: Visionary Landscapes in the Twenty-First Century*. In M. Lindstown & H. Bartling (Eds.), *Suburban Sprawl: Culture, Theory and Politics* (pp. 93-117). Maryland: Rowman & Littlefield.
- Rowe, P. (1991). *Making a Middle Landscape*. Massachusetts: Massachusetts Institute of Technology.
- Rowland, P. (2010). *Markets - Open-air Markets* Retrieved 23 July, 2011, from <http://www.teara.govt.nz/en/markets/4>
- Schrader, B. (1993). *Planning Happy Families : A History of the Naenae Idea*. (Master of Arts in History), Victoria University, Wellington.
- Schrader, B. (2003). *Styled by the State*. *Architecture New Zealand*(3), 42-44.
- Schrader, B. (2005). *We Call It Home: A History of State Housing in New Zealand*. Auckland: Reed Publishing.
- Schrader, B. (2010). *City Planning - Suburbs and Satellite Cities* Retrieved 7 July, 2011, from <http://www.TeAra.govt.nz/en/city-planning/4>
- Schwalbach, G. (2009). *Urban Analysis*. Basel: Birkhäuser Verlag AG.
- Shaw, P. (1991). *New Zealand Architecture - From Polynesian Beginnings to 1990*. Auckland: Hodder and Stoughton Ltd.

- Sills, A. (2011). Community Renewal - Housing New Zealand Corporation, Talbot Park, Auckland Retrieved 21 September, 2011, from <http://www.mfe.govt.nz/publications/urban/urban-design-case-studies-may08/html/page11.html>
- Skinner, R. (2000). Home Away - A State House in London. In B. Bookes (Ed.), *At Home in New Zealand* (pp. 155-164). Wellington: Bridget Williams Books.
- StatisticsNewZealand.(2006a).NewZealandCensusofPopulationandDwellings2006Retrieved 14 June, 2011, from <http://www.stats.govt.nz/Census/2006CensusHomePage.aspx>
- Statistics New Zealand. (2006b). Quick Stats About Housing - Ownership By Individuals Retrieved 14 September, 2011, from <http://www.stats.govt.nz/Census/2006CensusHomePage/QuickStats/quickstats-about-a-subject/housing/ownership-by-individuals.aspx>
- Stephenson & Turner. (2011). New Housing for Old. *Outlines* (Winter), 7.
- The Evening Post. (1906, 26 July). Are They Homes? – Workers’ “Dwellings” at Petone – A Bizarre Spectacle, *The Evening Post*, p. 5.
- Turner, D., Hewitt, J., Wagner, C., Su, B., & Davies, K. (2004). Best Practice in Medium Density Housing Design. Auckland: Unitec Institute of Technology for Housing New Zealand Corporation.
- Ward, S. (2002). Ebenezer Howard: His Life and Times. In K. Parsons & D. Schuyler (Eds.), *From Garden City to Green City: The Legacy of Ebenezer Howard* (pp. 14-37). Maryland: The John Hopkins University Press.
- White, P., Gunston, J., Salmond, C., Atkinson, J., & Crampton, P. (2008). Atlas of Socioeconomic Deprivation in New Zealand 2006 - Counties Manukau DHB Retrieved 25 July, 2011, from [http://www.moh.govt.nz/moh.nsf/Files/deprivation-maps/\\$file/countiesmanukau.pdf](http://www.moh.govt.nz/moh.nsf/Files/deprivation-maps/$file/countiesmanukau.pdf)
- Wilson, B. (2005). The Small House. In D. L. Jenkins (Ed.), *New Dreamland - Writing New Zealand Architecture* (pp. 146-153). Auckland: Random House.
- Wilson, G. (1949). A Pictorial Survey of Housing in New Zealand - Part One. *Design Review*, 2(3).
- Wilson, G. (1950a). A Pictorial Survey of Housing in New Zealand - Conclusion. *Design Review*, 3(1), 13-15.
- Wilson, G. (1950b). A Pictorial Survey of Housing in New Zealand - Part Three. *Design Review*, 2(5), 96-97.

## Appendix One

### Summary of Primary Fieldwork Data

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#### Definition of Terms

##### *Sales History*

*Sold/Assumed Sold* – Those properties that have a sales history, or by nature of their idiosyncratic redevelopments are assumed to have passed into private ownership. This includes properties that may have been in private ownership for a period (and therefore could have been redeveloped), but are once again state-owned.

*No Sales History* – Those properties that have no recorded sales history and are therefore assumed to still be in state ownership.

##### *Property Area*

Original, subdivided or shared lot size in m<sup>2</sup>. Due to incomplete council records, a small number of the surveyed properties' lot sizes are unknown. These properties are either semi-detached units, or are on shared titles.

##### *Approximate Built Site Coverage*

Estimate of site coverage by building footprints.

##### *Subdivided/Shared*

Those properties that have been subdivided or are on shared titles and now have at least one additional dwelling on their original site.

##### *Construction Type*

*CP/TF/T* – Concrete perimeter strip foundations (piles assumed), timber framing, tile roof.

*CP/TF/C* – Concrete perimeter strip foundations (piles assumed), timber framing, corrugated iron roof.

*CP/BV/T* – Concrete perimeter foundations (piles assumed), brick veneer (timber framing assumed), tile roof.

*CP/BV/C* – Concrete perimeter foundations (piles assumed), brick veneer (timber framing assumed), corrugated iron roof.

*P/TF/T* – Piles, timber framing, tile roof.

*P/TF/C* – Piles, timber framing, corrugated iron roof.



### *Façade Material*

*S&B* – Sheet and Batten.

*B&B* – Board and Batten.

*T&G* – Tongue and Groove.

*Stucco* – Generally assumed to be brick veneer beneath.

### *Common Redevelopments*

The five most prominent redevelopments of all the case studies combined.

### *Adjacent Boundary*

*High Rear and Front* – Those properties where a tall fence is the primary and defining boundary condition.

*High Rear-Low Front* – Fences which are taller at the rear of a property than they are at the front.

*High Rear-Nothing Front* – Fences which are tall at the rear of a property but do not exist at the front.

*Low Rear-Nothing Front* – Fences which are short at the rear of a property but do not exist at the front.

*Low/Medium/Permeable* – Those properties where a shorter fence, which can easily be seen over or through, is the primary and defining boundary condition.

*Hedge/Vegetation* – Those properties where a hedge or another form of vegetation is the primary and defining boundary condition. Note this does not include gardens against fence lines.

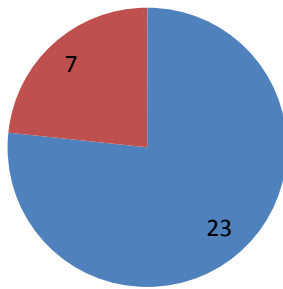
*Nothing* – Those properties where there is no definitive boundary condition.

### *Street Boundary*

See Adjacent Boundary.

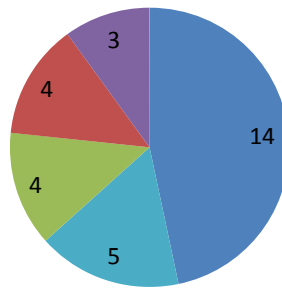
## Summary of Primary Data – Naenae

**Sales History**



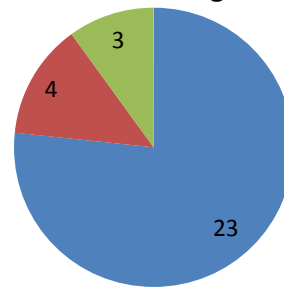
■ Sold/Assumed Sold  
■ No Sales History

**Property Area m<sup>2</sup>**



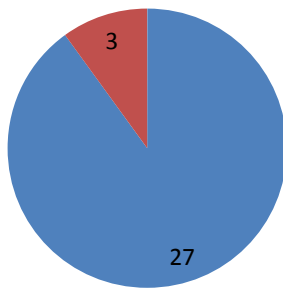
■ <700    ■ <600  
■ <800    ■ >800  
■ Unknown

**Approximate Built Site Coverage**



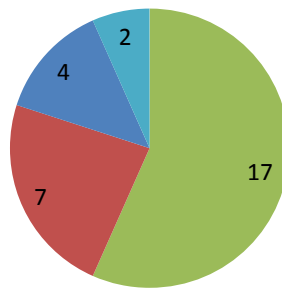
■ <1/3    ■ <1/2    ■ <1/4

**Subdivided/Shared**



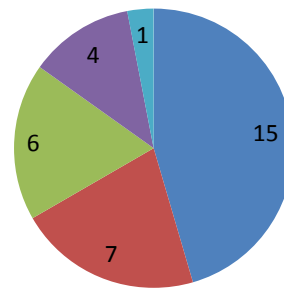
■ No    ■ Yes

**Construction Type**



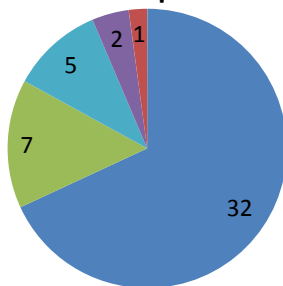
■ P/TF/T    ■ CP/BV/T  
■ CP/TF/T    ■ CP/TF/C

**Facade Material**



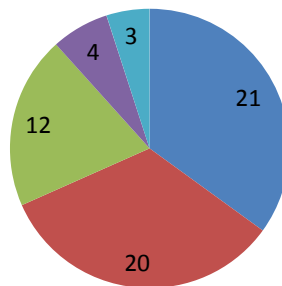
■ Weatherboard  
■ Brick  
■ Asbestos Sheet  
■ S&B/B&B  
■ Stucco

**Common Redevelopments**



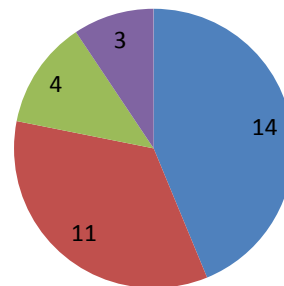
■ Garage/Carport  
■ Landscape  
■ Entrance Alteration  
■ Dwelling Addition/Alteration  
■ Deck/Outdoor Living

**Adjacent Boundary**



■ High Rear-Low Front  
■ High Rear and Front  
■ Low/Medium/Permeable  
■ Hedge/Vegetation  
■ Low Rear-Nothing Front

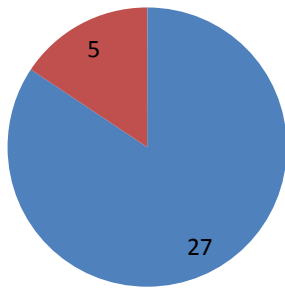
**Street Boundary**



■ Low/Medium/Permeable  
■ Nothing  
■ Hedge/Vegetation  
■ High >6ft

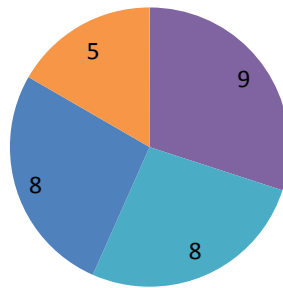
## Summary of Primary Data – Epuni

**Sales History**



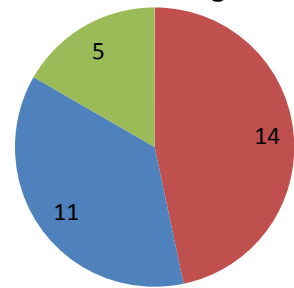
■ Sold/Assumed Sold  
■ No Sales History

**Property Area m<sup>2</sup>**



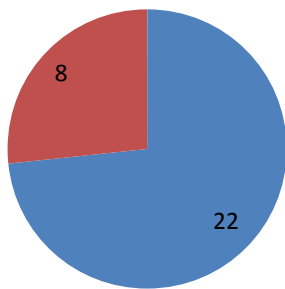
■ Unknown ■ <600  
■ <700 ■ <500

**Approximate Built Site Coverage**



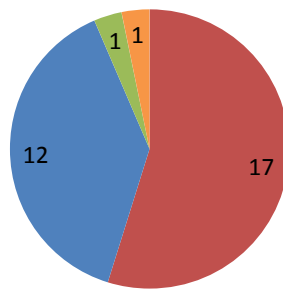
■ <1/2 ■ <1/3 ■ <1/4

**Subdivided/Shared**



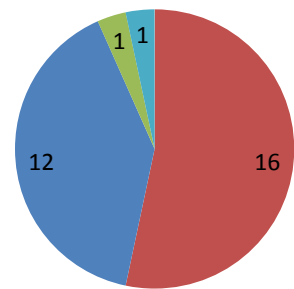
■ No ■ Yes

**Construction Type**



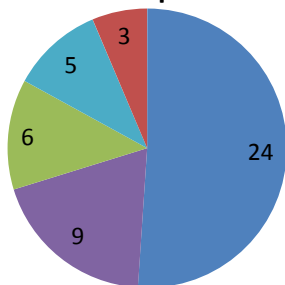
■ CP/BV/T ■ CP/TF/T  
■ P/TF/T ■ CP/BV/C

**Facade Material**



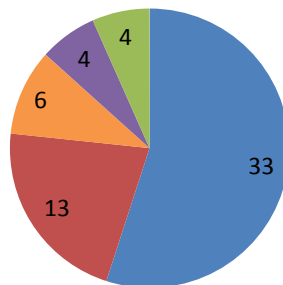
■ Brick  
■ Weatherboard  
■ Asbestos Sheet  
■ Stucco

**Common Redevelopments**



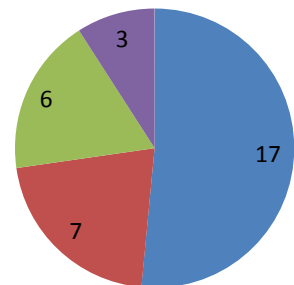
■ Garage/Carport  
■ Dwelling Addition/Alteration  
■ Landscape  
■ Entrance Alteration  
■ Deck/Outdoor Living

**Adjacent Boundary**



■ High Rear-Low Front  
■ High Rear and Front  
■ High Rear-Nothing Front  
■ Hedge/Vegetation  
■ Low/Medium/Permeable

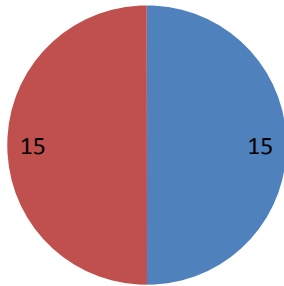
**Street Boundary**



■ Low/Medium/Permeable  
■ Nothing  
■ Hedge/Vegetation  
■ High >6ft

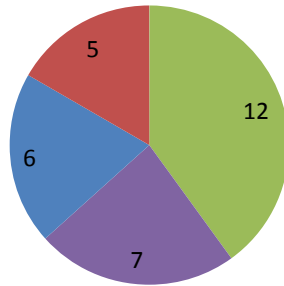
## Summary of Primary Data – Point England

**Sales History**



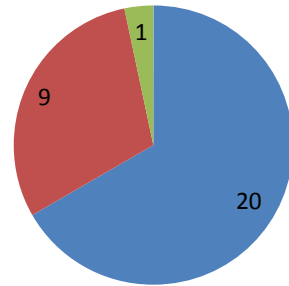
■ Sold/Assumed Sold  
■ No Sales History

**Property Area m<sup>2</sup>**



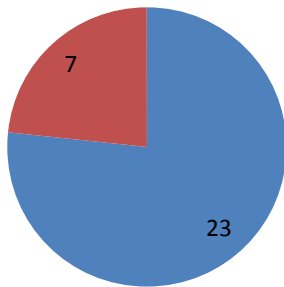
■ <800      ■ Unknown  
■ <700      ■ >800

**Aproximate Built Site Coverage**



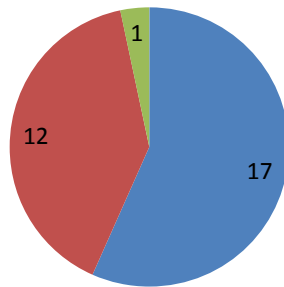
■ <1/3      ■ <1/2      ■ <1/4

**Subdivided/Shared**



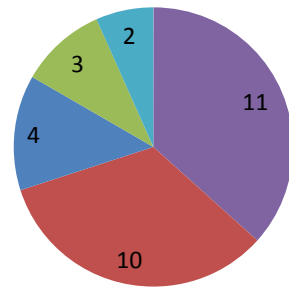
■ No      ■ Yes

**Construction Type**



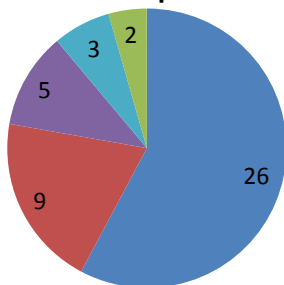
■ CP/TF/T      ■ CP/BV/T      ■ P/TF/T

**Facade Material**



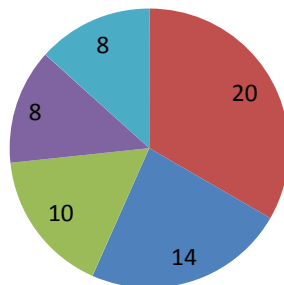
■ S&B/T&G  
■ Brick/Stone  
■ Weatherboard  
■ Asbestos Sheet  
■ Stucco

**Common Redevelopments**



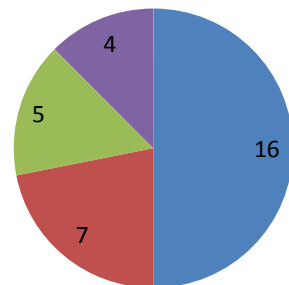
■ Garage/Carport  
■ Deck/Outdoor Living  
■ Dwelling Addition/Alteration  
■ Entrance Alteration  
■ Landscape

**Adjacent Boundary**



■ High Rear and Front  
■ High Rear-Low Front  
■ Low/Medium/Permeable  
■ Hedge/Vegetation  
■ Low Rear-Nothing Front

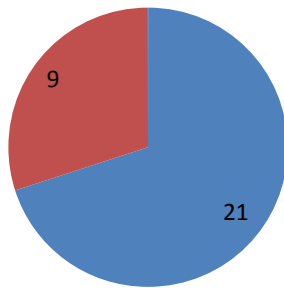
**Street Boundary**



■ Low/Medium/Permeable  
■ Nothing  
■ Hedge/Vegetation  
■ High >6ft

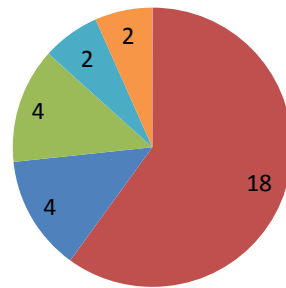
## Summary of Primary Data – Glen Innes

**Sales History**



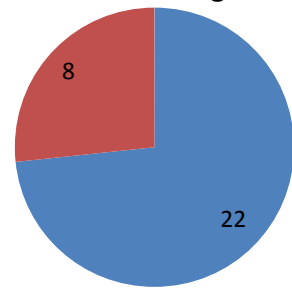
■ Sold/Assumed Sold  
■ No Sales History

**Property Area m<sup>2</sup>**



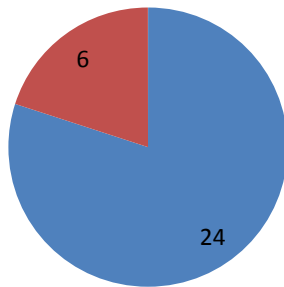
■ >800 ■ <700 ■ <800  
■ <600 ■ <500

**Approximate Built Site Coverage**



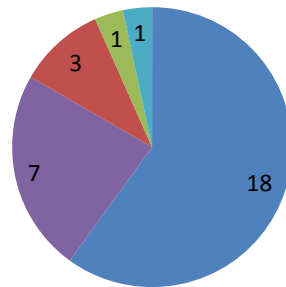
■ <1/3 ■ <1/2

**Subdivided/Shared**



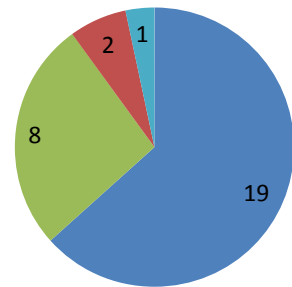
■ No ■ Yes

**Construction Type**



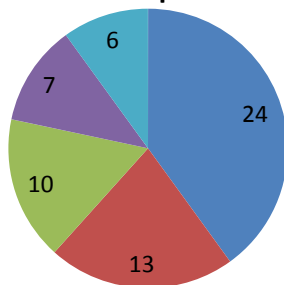
■ CP/TF/T ■ P/TF/C ■ CP/BV/T  
■ P/TF/T ■ CP/TF/C

**Facade Material**



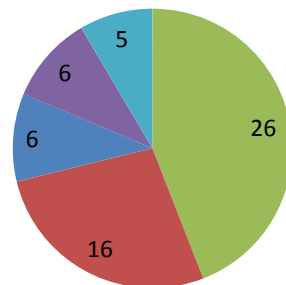
■ Weatherboard  
■ Asbestos Sheet  
■ Brick  
■ Stucco

**Common Redevelopments**



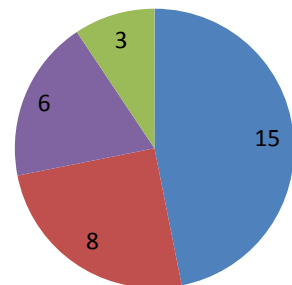
■ Garage/Carport  
■ Deck/Outdoor Living  
■ Landscape  
■ Dwelling Addition/Alteration  
■ Entrance Alteration

**Adjacent Boundary**



■ Low/Medium/Permeable  
■ High Rear and Front  
■ High Rear-Low Front  
■ Hedge/Vegetation  
■ Low Rear-Nothing Front

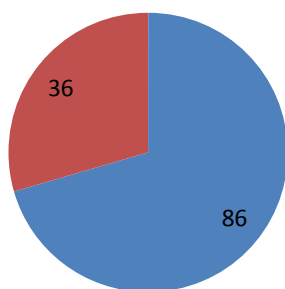
**Street Boundary**



■ Low/Medium/Permeable  
■ Nothing  
■ High >6ft  
■ Hedge/Vegetation

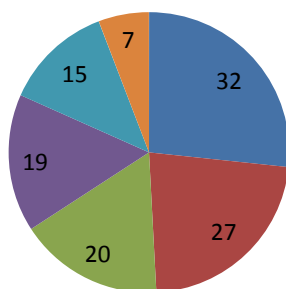
## Summary of Primary Data – Combined Case Studies

**Sales History**



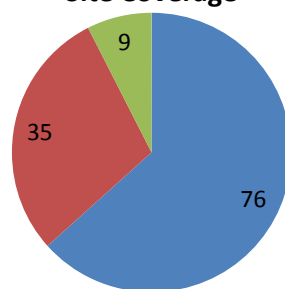
■ Sold/Assumed Sold  
■ No Sales History

**Property Area m<sup>2</sup>**



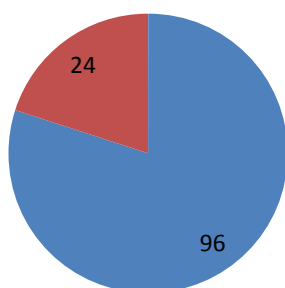
■ <700      ■ >800  
■ <800      ■ Unknown  
■ <600      ■ <500

**Approximate Built Site Coverage**



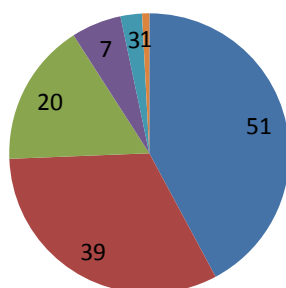
■ <1/3      ■ <1/2      ■ <1/4

**Subdivided/Shared**



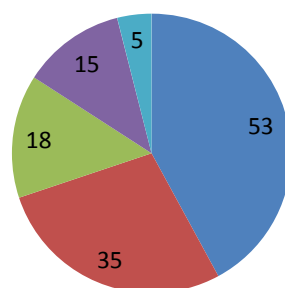
■ No      ■ Yes

**Construction Type**



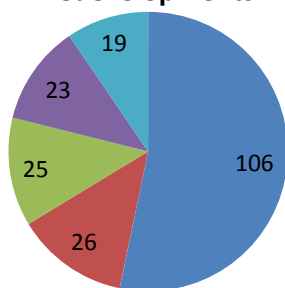
■ CP/TF/T      ■ CP/BV/T      ■ P/TF/T  
■ P/TF/C      ■ CP/TF/C      ■ CP/BV/C

**Facade Material**



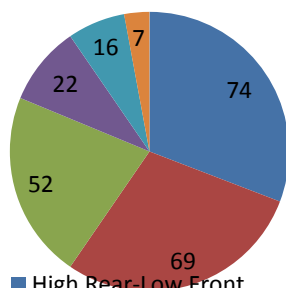
■ Weatherboard  
■ Brick/Stone  
■ Asbestos Sheet  
■ S&B/B&B/T&G  
■ Stucco

**Common Redevelopments**



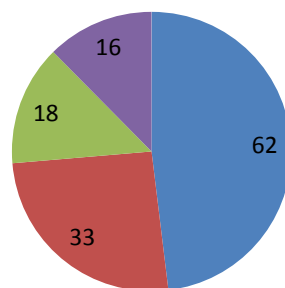
■ Garage/Carport  
■ Deck/Outdoor Living  
■ Landscape  
■ Dwelling Addition/Alteration  
■ Entrance Alteration

**Adjacent Boundary**



■ High Rear-Low Front  
■ High Rear and Front  
■ Low/Medium/Permeable  
■ Hedge/Vegetation  
■ Low Rear-Nothing Front  
■ High Rear-Nothing Front

**Street Boundary**



■ Low/Medium/Permeable  
■ Nothing  
■ Hedge/Vegetation  
■ High >6ft



