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streetscape: dialogues of street + house

A thesis
submitted in fulfilment
of the requirements for the Degree of
Master of Landscape Architecture

at
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by
Laura Kate Pyne

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“we go back to some streets more often than to others... maybe a street unlocks memories or offers expectation of something pleasant to be seen..”

An often overlooked aspect of urban housing development is the composition of the space between buildings; the streetscape. The pressures of suppressing suburban sprawl have seen housing developments respond by increasing residential density within more centralised city sites. Medium-density housing typologies are often used as urban infill in response to the challenge of accommodating an increasing population. A by-product of these renewed areas is the creation of new open space which serves as the fundamental public space for sociability to develop in communities. Street space should emphasise this public expression by encouraging social exchange and interaction. As a result, a neighbourhood owes its liveliness (or lack thereof) to its streets.

The issue of density when applied to the urban housing landscape encompasses two major components: the occupancy of both the private realms, constituting the residential built form, and the public spaces that adjoins them, the streets. STREETSCAPE: dialogues of street + house. Continual transition between the realms of public and private (building and street space) enact active edges, giving way to public stimulation; the opportunity for experiencing other people. The advent of seeing and hearing other people in connection with daily comings and goings encourages social events to evolve, enhancing the notion of neighbourly conduct.

Within New Zealand, and specifically in Christchurch as considered here, the compositions of current streetscapes lack the demeanor to really encourage and facilitate the idea of neighbourly interaction and public expression. Here lies the potential for new street design to significantly heighten the interplay of human activity. In response, this research project operates under the notion that the street spaces of urban residential areas are largely underutilised. This lack is particularly evident in the street.

Street design should strive to produce spaces which stimulate the public life of residents. There exists a need to reassert eminence of the street as a space for vibrant neighbourhood life. This thesis employs design as a tool for researching and will involve using numerous concept generators to trigger the production of multiple scenarios. These scenarios are to explore the ways in which the streetscapes within medium-density urban communities could respond in the event of (re)development.

abstract | streetscape: dialogues of street + house
A big thank you to my supervisors, Dr. Jacky Bowring and Dr. Shannon Davis, for their guidance, advice, encouragement and for keeping me on track. Also a big thank you to my family and friends for their continual support and love.
Christchurch quake: Tuesday Feb 22 as it happened. Published: 10:33PM Tuesday February 22, 2011 Source: ONE News

3.46pm: Delegates at the United States New Zealand Partnership Forum meeting in Christchurch are understood to be safe, but that could not be officially confirmed. A US delegation of 43 government, business and community leaders was attending the forum, which began yesterday and was due to end this evening.

3.43pm: The motorway is reported to be closed going out of Christchurch, which Ms McCully says today apparently seems to be the worst area. Most of the damage appears to be centralised to the central city.

3.27pm: It has been confirmed that the quake struck 5kms deep.

3.21pm: The NZTA has closed the Lyttelton Tunnel. The agency reports that the Rakaia Tunnel was 5 kms deep.

3.05pm: The NZTA has also closed the Lyttelton Tunnel. The agency reports that the Rakaia Tunnel was 5 kms deep.

2.59pm: Civil Defence HQ in Wellington is on level 3, its highest level for a domestic incident. They are struggling to reach staff in Christchurch. The agency confirms that all its staff, except the two at the Lyttelton Tunnel, are safe. Radio frequencies are out in Christchurch. NewsTalk ZB is out on 91.3FM, 97.7FM and 106.5FM Christchurch.

2.53pm: New pictures show a great deal of structural damage in the central city. A witness says the quake may have struck at faultline to September's. More aftershocks are coming through every few minutes.

2.48pm: People in the area are asked to text not call to reduce pressure on phonelines. It is confirmed a significant aftershock struck an hour ago at 1.46pm. It had a magnitude of 4.4 and a depth of 5km, centred 10km east of Lyttelton.

2.42pm: Australian Foreign Minister Kevin Rudd sends his solidarity to "our Kiwi friends". He has spoken with Foreign Minister Murray McCully and says there are fears in New Zealand about deaths and injuries. "For the people of Christchurch it just isn't fair," he said.

2.38pm: Christchurch Hospital has not been completely evacuated, contrary to previous reports. TVNZ has had unconfirmed reports that buildings has been flattened in Lyttelton, near Rapaki and Mataone. One caller heard from scared family saying there are boulders and other debris that have come down and taken out cars and houses.

2.34pm: TVNZ has had unconfirmed reports of houses flattened in Lyttelton, near Rapaki and Mataone. One caller heard from scared family saying there are boulders and other debris that have come down and taken out cars and houses.

2.21pm: Mayor Bob Parker, talking to ONE News live, says another aftershock has just struck.

2.18pm: Mike Hall, National Fire Commander, says an assessment will be made at 3pm as to whether international help is called for. He says there are unconfirmed reports of people trapped.

2.13pm: Defence Force has been called in to assist, police said.

2.11pm: Prime Minister John Key is due to make a statement on his way into Parliament this afternoon.

1.52pm: Christchurch Airport is closed. Its terminals have been evacuated. 1.50pm: The centre of this quake is shallower than the last one.

1.48pm: The damage is far worse than the September 4.1 magnitude quake. Civil Defence Minister John Carter says the situation is very serious. There has been an unconfirmed report of a death.

1.45pm: First television pictures show devastation in the CBD: Buildings are collapsed. Roads are torn up.

1.42pm: Prime Minister John Key says there must have been people killed and major injuries. TVNZ building has been severely damaged.

1.40pm: One News describes situation as catastrophic. He has seen people with blood pouring from their faces. They are fleeing town.

1.37pm: TVNZ is live on air but its newsroom in Christchurch is badly damaged.

1.36pm: Mayor Bob Parker says pipes are burst throughout the CBD. He knows of injuries and unconfirmed reports of serious injuries.

1.34pm: Australian Foreign Minister Kevin Rudd sends his solidarity to "our Kiwi friends".

1.33pm: Civil Defence has declared its highest level of emergency in the region - level 3.

1.30pm: ONE News reporter Joy Reid says people are in shock and the smell of dust in the city is much stronger than last time. She says the time the quake struck means the damage has been less.

1.25pm: Mayor Bob Parker, talking to ONE News live, says another aftershock has just struck.

1.21pm: Mike Hall, National Fire Commander, says an assessment will be made at 3pm as to whether international help is called for. He says there are unconfirmed reports of people trapped.

1.10pm: Mayor Bob Parker says pipes are burst throughout the CBD. He knows of injuries and unconfirmed reports of serious injuries.

1.06pm: The quake has been felt across the South Island and Christchurch is badly damaged.

1.02pm: Mayor Bob Parker says pipes are burst throughout the CBD. He knows of injuries and unconfirmed reports of serious injuries.

1.00pm: Mayor Bob Parker says pipes are burst throughout the CBD. He knows of injuries and unconfirmed reports of serious injuries.

12.51pm: A major earthquake hits Christchurch.

12.48pm: Swigg is about to tweet saying "biggest quake yet even Christchurch wasn't that bad".

12.38pm: Twitter user "michael curry" says "major earthquake in Christchurch. Huge damage to my work!"

12.34pm: Twitter user "michael curry" says "major earthquake in Christchurch. Huge damage to my work!"

12.30pm: "michael curry" says "major earthquake in Christchurch. Huge damage to my work!"

12.21pm: Mayor Bob Parker says pipes are burst throughout the CBD. He knows of injuries and unconfirmed reports of serious injuries.

12.18pm: Mayor Bob Parker says pipes are burst throughout the CBD. He knows of injuries and unconfirmed reports of serious injuries.

12.15pm: Mayor Bob Parker says pipes are burst throughout the CBD. He knows of injuries and unconfirmed reports of serious injuries.

12.12pm: Mayor Bob Parker says pipes are burst throughout the CBD. He knows of injuries and unconfirmed reports of serious injuries.
The undertaking of this thesis began in April 2010. My research proposal was approved, the abstract entailing the streetscape scene of Christchurch City had been established and fieldwork was underway. On September 4th 2010 at 4:35am a magnitude 7.1 earthquake struck Canterbury. Widespread damage and several power outages were caused particularly to Christchurch City. Thankfully no fatalities occurred. Just as Christchurch was beginning to get back on its feet in wake of the recovery efforts, another powerful quake hit Canterbury on February 22nd 2011 at 12:51pm. Although of a lower magnitude than September 4th, this quake was considerably shallower and centred right beneath the city. Consequently there were 181 fatalities.

The damage to the built form was widespread and much more severe this time. Not only did the central city suffer badly but parts of the eastern residential suburbs were hit hard, to the extent that an area of around 5100 properties has been zoned red: “Land marked red is unlikely to be suitable for continued residential occupation for a prolonged period of time due to there being significant and extensive area wide land damage and a high risk of further damage to land and buildings from low level shaking...” A few of the streetscapes surveyed in this thesis lie within the worst affected areas, now zoned “red.” For some residents of Packe Street (Edgeware), Peterborough Street (Central City), Glendevre Terrace (Redcliffs) and Chester Street West (Central City), the future of their homes have been dealt an ill fate. It is likely that relocating altogether will be the only option for these residents. Not only have homes and buildings been shaken but so too have the lives of Christchurch citizens.

It is to be noted that the majority of base research for my thesis, involving inquiry into the issues and conditions of Christchurch City, was undertaken prior to September 4th 2010. Fieldwork findings, including photographs and observations made through the inquiry phase of Chapter Three, are therefore based on the pre-earthquake condition of the built fabric. Although Christchurch City provides the basis for a case study, evidence of derelict street space can be found through all New Zealand cities and so the methods and outcomes of the design phase are not prescribed to specific locations.
projected scenarios in the closure of this thesis are investigations into the possibilities of change: for changes in status-quo street design is needed not only in Christchurch but in locations throughout the country.

While the Canterbury earthquakes have been significant in changing the aesthetics and form of the Christchurch landscape, and in particular a number of the case study streets, the underlying principles of the project abstract still remain. The tragic events which have occurred since beginning this thesis only enforces the importance of questioning the status quo. For now, in light of a monumental recovery and rebuild task, we have been forced to re-evaluate how we design our residential landscapes.
2.59pm: Civil Defence HQ in Wellington is on level 3 – its highest level for a domestic incident. They are struggling to reach staff in Christchurch.

2.58pm: NZTA confirms that all its staff, including those at the Lyttelton Tunnel, are safe.

2.54pm: All AM radio frequencies are out in Christchurch. Newstalk ZB is broadcasting on 91.3FM, 97.7FM and 106.5FM Christchurch.

2.53pm: New pictures show a great deal of liquefication in the central city.

2.52pm: GNS says the quake may have struck on a different faultline to September’s. More aftershocks are coming through every few minutes.

2.51pm: People in the area are asked to text not call to reduce pressure on phonelines.

2.46pm: It is confirmed a significant aftershock struck an hour ago at 1.46pm. It had a magnitude of 4.4 and a depth of 5km, centred 10 km east of Lyttelton.

2.42pm: Australian Foreign Minister Kevin Rudd sends his solidarity to “our Kiwi friends.” He has spoken with Foreign Minister Murray McCully and says there are fears in New Zealand about deaths and injuries. “For the people of Christchurch it just isn’t fair,” he said.

2.38pm: Christchurch Hospital has not been completely evacuated, contrary to previous reports.

2.34pm: TVNZ has had unconfirmed reports of houses being flattened in Lyttelton, near Rapaiki and Tamatea. One caller heard from scared family, saying there are boulders and other debris that have come down and taken out cars and houses.

2.31pm: GNS says today’s quake was stronger, but shorter than September’s. It was a different type of shaking, so will have affected different buildings.

1.50pm: The centre of this quake is shallower than the last one.

1.49pm: The damage is “far worse” than the September 4 7.1 magnitude quake. Civil Defence Minister John Carter says the situation is very serious. There has been an unconfirmed report of a death.

1.45pm: First television pictures show devastation in the CBD. Buildings are collapsed. Roads torn up.

1.37pm: Christchurch mayor Bob Parker said he was thrown across the room by the quake which was very, very strong. “It felt more like a whole new earthquake to me,” he told Radio New Zealand.

1.34pm: A woman in Richmond said the quake was worse than the 7.1 magnitude quake on September 4. There is flooding on the streets, residents have reported broken glass, though that it is 6.3.

1.27pm: Christchurch mayor Bob Parker said there are hurt throughout the CBD. He has spoken with Foreign Minister Murray McCully and says there are fears in New Zealand about deaths and injuries. “For the people of Christchurch it just isn’t fair,” he said.

1.28pm: One News describer. He has seen people with blood pouring from their faces. They are fleeing town.

1.25pm: TVNZ is live on air but its newsroom in Christchurch is badly damaged.

1.14pm: A US delegation of 43 government, business and community leaders was attending the forum, which began yesterday and was due to end this evening.

The whereabouts of US Assistant Secretary of State Kurt Campbell could not be confirmed.

1.13pm: Christchurch is badly damaged.

1.12pm: TVNZ understands Christchurch police station has been evacuated.

2.52pm: John Key tells Parliament details are sketchy but the people of Canterbury are going through a “traumatic and frightening” experience after shock has just damaged as last time.

12.56pm: All AM radio frequencies are out in Christchurch. NZTA confirms that all its staff, including those at the Lyttelton Tunnel, are safe.

12.54pm: All AM radio frequencies are out in Christchurch. NZTA confirms that all its staff, including those at the Lyttelton Tunnel, are safe.

12.52pm: Christchurch Airport is closed. Its terminals have been evacuated.

12.50pm: NZTA confirms that all its staff, including those at the Lyttelton Tunnel, are safe.

12.46pm: It is confirmed a significant aftershock struck an hour ago at 1.46pm. It had a magnitude of 4.4 and a depth of 5km, centred 10 km east of Lyttelton.

12.42pm: Australian Foreign Minister Kevin Rudd sends his solidarity to “our Kiwi friends.” He has spoken with Foreign Minister Murray McCully and says there are fears in New Zealand about deaths and injuries. “For the people of Christchurch it just isn’t fair,” he said.

12.38pm: Christchurch Hospital has not been completely evacuated, contrary to previous reports.

12.34pm: TVNZ has had unconfirmed reports of houses being flattened in Lyttelton, near Rapaiki and Tamatea. One caller heard from scared family, saying there are boulders and other debris that have come down and taken out cars and houses.

12.30pm: Major Bob Parker, talking to ONE News Reporters: “The city is shaking to its core. We’re currently seeing reports of liquefaction spreading throughout the city. People are being advised to stay in their homes. The worst area appears to be the central city where buildings have collapsed.”

12.15pm: The NZTA has closed the Lyttelton Tunnel. The agency reports that the Rakaia Bridge on SH1 south of Christchurch is also damaged as last time.

12.12pm: Christchurch quake: Tuesday Feb 22 as it happened. Published: 10:39PM Tuesday February 22, 2011 Source: ONE News

3.46pm: Delegates at the United States New Zealand Partnership Forum meeting in Christchurch are understood to be safe, but that could not be officially confirmed.

A US delegation of 43 government, business and community leaders was attending the forum, which began yesterday and was due to end this evening.

The whereabouts of US Assistant Secretary of State Kurt Campbell could not be confirmed.

3.43pm: The motorway is reported to be clogged going out of Christchurch, which currently seems to be the worst hit area. Most of the damage appears to be centralised to the city.

The Waimakariri district is experiencing some liquefaction according to the district mayor. The Christchurch city council has declared a state of emergency.

3.38pm: Contact Epyote, reports of gas leaking and gas from the gas supply to premises and appliances is coming out of the central city. Please stay in your homes.

3.36pm: Police Christchurch Hawke & Beechworth。“
Residents and contractor vehicles only past this point.

Restricted area ahead of you.
streetscape

Streets were once the centre of social life for many cultures. The street in conjunction with the wider community was considered the setting for life in which the dwelling was merely a more enclosed part of the living environment. After the introduction of the motor vehicle the nature of streets changed to become primarily a movement corridor. Consequently the street as a place to congregate became undesirable and so the role of the dwelling shifted to become the total setting for life. Of great concern today, and the founding principle of my research focus, is the level of segregation between house and street.

The use of street is redefined in this thesis to eliminate the characteristic segregation evident in today’s suburban streets. The street and the house should not be viewed as separate entities but rather as a collective whole. To reflecting this collectiveness, street becomes streetscape. The term ‘scape’ once meant a composition of similar objects. “Old English, or Anglo-Saxon, seems to have contained several compound words using the second syllable ‘scape’...to indicate collective aspects of the environment.”

In this thesis streetscape is perceived as the incorporation of the house and yard as an extension of the street. The streetscape stands for the urban housing landscape by encompassing two major components: the occupancy of both the private realms, constituting the residential built form, and the public spaces that adjoins them, the streets.

design as research

“Design is a way of inquiring, a way of producing knowing and knowledge; this means it is a way of researching.”

This project is about vision; what will transform the existing into the desired and how will these desired things work and look? Designing is used in this project as a tool for testing propositions, for propositions will arise as a result of inquiry into
landscape architecture history + criticism | natural + cultural systems | design + planning theories and methodologies | public policy and regulation | design, planning + management at various scales and application | site design + engineering | construction documentation and administration | communication | values + ethics in practice
Before structuring a research project within any discipline, the ground on which the researcher stands must be established. Classification of research undertaken in more traditional research fields such as natural and human science can be positioned under an “objective” approach that assumes reality as a concrete structure, independent of the researcher. At the opposite end of the spectrum, the fields of fine arts and humanities represent a “subjective” approach where reality is presumed as a projection of human imagination and social construction. A dichotomous inquiry model of deductive and inductive research strategies is positioned under each approach. Deductive research seeks clarification of factors from theory and from systematic testing through formal processes of experimentation. It is typically associated with the “objective” approach. Inductive research generates descriptions and explanations of relationships of the world grounded in evidence that is experiential and empirical. So where does the discipline of landscape architecture position itself amongst this two-dimensional framework?

Nine core knowledge domains are identified by the Landscape Architecture Body of Knowledge (LABOK) project (as detailed in the opposite text). The LABOK project aimed to establish the competencies that characterised landscape architecture and as we can see, the discipline requires knowledge from a vast array of sub-disciplines each bringing with them a broad range of paradigms. Due to the expansive boundaries of the discipline, research in landscape architecture takes on a transitional stance, moving between the conventional categories of inductive and deductive research. Deming and Swaffield have recognised a third dimension, termed the ‘reflexive approach’ where “researchers move back and forth...
between deductive and inductive perspectives, modifying their theoretical propositions in the light of evidence... and exploring new possibilities of understanding... The core activities of the field include design and critical thinking and so landscape knowledge is actively created as opposed to being found. However it is still anchored "to some degree in a world that exists beyond the subjectivity of an individual or group of individuals," and so a reflexive approach, spanning both subjective and objective dimensions, makes sense of the conceptual nature of landscape architectural research.

The system of inquiry framing my thesis adopts this reflexive approach proposed by Deming and Swaffield. This philosophical stance reflects the nature of landscape architecture as a profession and consequently my stance as a researcher. Articulation of this reflexive system of inquiry now sets the scene for more specific choices about methodology to be made. Due to the transitional character of the reflexive approach (where researchers move back and forth between deductive and inductive perspectives) my research structure will adopt multiple strategies under which various tactics are chosen. Strategies and tactics are defined in this context according to Groat & Wang, where "strategy is the overall research plan or structure of the research study and tactics are the specific techniques used." The structure and techniques adapted throughout this thesis are detailed as follows:

**inductive perspective**  
**Strategy:** Description

**Tactic:** Direct Observation. Observational notes are used for the visual essays in Chapter 03 as a descriptive technique to convey each site's characteristics.

**Tactic:** Case Study. Christchurch is used as a case study to provide a contextual framework for which the focus of the research (streetscapes) can be investigated. Chapters 01, 03 + 0 4 of this thesis describe the scene of a real-life residential context where the topic of street design is explored.
**deductive perspective**  *Strategy: Evaluation*

*Tactic: Design Evaluation.* Comparative evaluations are made in Chapter 03 between the descriptive findings of Christchurch + Auckland streets in light of the ideal criteria for quality street design, prescribed by two exemplars (Allan Jacobs and the UK Department for Transport's Manual for Streets).

**reflexive perspective**  The reflexive approach is ultimately realised in the design research phase of the thesis, where theoretical propositions in light of the evidence are modified and new possibilities explored. Chapter 05 explains the design endeavour and details the integration of Modelling + Correlation and Projective Design as the strategies for this phase. The use of such strategies is then exhibited in Chapters 06 and 07 respectively.

*Strategy: Modelling + Correlation*

*Tactic: Analytical /Descriptive models.* Analytic drawings are employed in Chapter 06 as a tool to investigate a particular street design principle within a determined streetscape. Analytic drawings in the form of ground plans or sections are used to expose a certain aspect of that streetscape in simplified terms.

*Strategy: Projective Design*

*Tactic: Research by Design.* Chapter 07 exhibits the projection of new scenarios for streetscape visions. Perspectives are used as a drawing technique to present these visions, opening up a stream of thought for future street design.
The issues, trends and theories of sustainable urban growth facing cities worldwide. The urban consolidation model is considered on an international level and how New Zealand cities are being shaped by the adoption of such policies for growth. Medium density housing is introduced as a product of intensification and acceptance of this shift is investigated.

A more specific look at the above issues within the context of Christchurch City as a case study. The design research phase of the thesis is first introduced with respect to the design site, the Living Ground.

Discussion of the theories and professional works relating to the contemporary landscape and the contemporary city. The role of the street is reintroduced as the generator of future scenarios for residential living.

A visual study into the urban streetscape scene of two New Zealand cities: Christchurch and Auckland. Chapter four also details a range of criteria by which two key authors advocate as requirements for achieving great streets.

Explains design research and details design as a tool for researching. The design strategy is presented as a framework for which the remainder of the thesis will adhere to.

Analytical and experimental graphics are exhibited in reflection of four design generators which offer fresh and alternative approaches to the perception of street space.

The ideas expressed as design generators are translated into specific street contexts in the form of computer generated perspective images.

Conclusion, compiling the research findings, explorations, insights and design ideas. The final streetscape visions are contemplated in regards to the themes presented throughout the thesis and to future research directions.
6 Ibid; p157
10 Ibid
12 Ibid
14 Ibid; p8

notes
**setting the scene** depicts the wider context for the research subject. The contemporary urban fabrics of cities worldwide are facing issues of sustainable growth management. The urban consolidation model as a sustainable response to growth is a concept being implemented by planning authorities worldwide. Consequently, waves of innovative housing typologies are being implemented overseas in response to the need for higher density accommodation. The form of New Zealand cities is also being shaped by the adoption of urban consolidation policies resulting in changing lifestyle trends and housing choices. Medium density housing is a product of these intensification planning policies and is promoted as a typology suitable for New Zealand urban conditions. Acceptance of this shift from low density suburban development to medium density intensification is being met by opposition, especially from Christchurch City residents. The negative connotations associated with this model predominantly involve reduced open space and loss of greenery. The street space is introduced at this point as a tool for the positive promotion of consolidated living, revealing the potential for street design to enhance living environments of higher density.
sustainability + urban form

“At the heart of this assessment is a stark warning. Human activity is putting such strain on the natural functions of Earth that the ability of the planet’s ecosystems to sustain future generations can no longer be taken for granted.”

This alarming warning was released in a Statement from the Board of the Millennium Ecosystem Assessment (MA) in 2005, *Living Beyond Our Means: Natural Assets and Human Well-Being.* The MA was initiated in 2001 with the objective of assessing the consequences of ecosystem change on human well-being. The bottom line of the report states that protection of our natural assets is central to the aspirations of mankind. This pressing concern is magnified by the state of the world’s population. With over half the world’s current population (3.3 billion) living in urban areas, and that number predicted to increase to almost 5 billion by 2030, “scientists warn that staying on our growth-based path to global development virtually guarantees eventual catastrophe for billions of people.” Decisions need to be made in preparation for this growth as the management of city growth is the key factor aiding sustainable development. Although this sense of sustainable urgency has escalated in the past few years, it is a pressing issue taking place at “inter-governmental, governmental and local government levels across the world.” Following the release of the Brundtland Commission report in 1987, a global awareness of environmental sustainability arose regarding the urgent need to preserve the world’s natural resources. The report urged that the natural environment become a political priority under the notion of sustainable development - where planning policies should balance economic growth and in turn urban growth, with environmental protection.

“The relationship between urban form and sustainability is currently one of the most hotly debated issues on the international environmental agenda.” Which urban form best delivers environmental protection while promoting economic, social and cultural sustainability? This leads to the debate of urban compaction: the compact city. The idea of compaction or urban consolidation stems from the premise that new urban growth is contained within an existing urban boundary. This is achieved through the intensity of new developments and the revitalisation of existing inner city sites, resulting in the

density + sprawl

01 setting the scene
conversion of residential areas to higher densities and the infilling of vacant sites. Advocates of this model argue that containing new growth within an existing city boundary is a way of reducing travel distances and therefore emissions, while encouraging walk-ability and use of public transport. The vision of the compact city can be likened to “the model of the densely developed core of many historic European cities,”8 where vitality of urban life is witnessed among a concentration of mixed uses. Medieval cities epitomise the walk-able city. Streets represent a labyrinth of narrow paths directed at pedestrians, “They were built as integral parts of local neighbourhoods rather than as routes for through transit.”9 Fig. 1.00 of Venice, Italy displays the spatial richness of a compact city core. Density is understood in both plan and 45° views: Open space is well defined through built density and provides a intricate circulation network as well as defining greater areas such as squares and plazas for events and gatherings.

Those against urban compaction claim that while the model is perhaps sustainable in the environmental sense, it comes at a loss to the social and economic environment as there is a perceived demise in the quality of life for residents. There is no doubt that living at higher densities will have lifestyle implications. This resonates within New Zealand where residents confronted with the prospect of urban consolidation are actually shying away from it.10 Perhaps it’s the embedded lifestyle mentalities held by many New Zealanders which are to blame, for the idea of living “in compact urban forms demands lifestyle changes, many of which challenge deeply held beliefs and values around suburban living.”11

Nonetheless the current spatial distribution of populations favouring low density suburbia does not align with the preservation and protection of the natural environment. Suburban sprawl, typically low-lying and sparse, is the product of the search for “ideal villas in nature;”12 single family houses standing on their own plot, evoking a sense of space and separation. Rather than urban open spaces being tightly surrounded and defined by buildings, typical of medieval cities [Fig. 1.00], the trend is moving towards an expansion of free-standing structures lost in space, as seen in many North

density + sprawl

01 setting the scene
American cities such as Austin, Texas [Fig. 1.01]. The image reflects a landscape of flatness and uniformity where a 45° three dimension view displays limited variation from its two dimension aerial equivalent. The residential built form is so dispersed that its open space has no definition. There is too little sense of enclosure and pedestrians are literally lost in space, feeling vulnerable to the elements and deprived of protection (as usually offered by the close facade of a building). Consequently residents then prefer to retreat into their homes to obtain a level of comfort and so a lifestyle of isolation replaces that of community life. In comparison, the street network of the Venice City model is of a human scale and therefore residents are comfortable undertaking activities in these spaces rather than within the confines of their homes. It is perhaps even preferential to spend more time in the street environment than indoors.

The price of the suburban migration is the obliteration of the peripheral landscape and consequently, desertion of the city centre. Land mass has physical edge limits and at the current rate of expansion, the time taken for that limit to be reached may be closer than anticipated. This especially rings true for the Netherlands, “which is becoming more congested and inchoate, and the traditional spatial relationship between town and countryside is almost reversed.”\textsuperscript{14} New pressures on landscape and environment have arisen since the Dutch government’s memorandum on planning, required eight hundred thousand to a million new homes built before 2015.\textsuperscript{15} As a result, new developments will be distinguished by increased housing density and compactness.

The peripheral landscape is a concern for New Zealand cities also; “New Zealand’s urban worlds have long been thought of as essentially suburban. Low densities and single family housing have dominated the residential pattern.”\textsuperscript{16} Subdivision developments seeking large areas of vacant land turn to the urban edge as inner city sites are inadequate in size. Not only is the distinction between the urban and the open countryside at risk, but a major concern with this pattern of urban morphology lies once again with the fundamental issue of creating sustainable cities. It is clear that the form of suburban density + sprawl

01 setting the scene
sprawl opposes the form of the compact city, and in parallel, it is clear too that suburban sprawl opposes the concept of a sustainable city.

“Sprawl is not healthy growth; it is essentially self-destructive. Even at relatively low population densities, sprawl tends not to pay for itself financially and consumes land at an alarming rate, while producing insurmountable traffic problems and exacerbating social inequity and isolation.”17
This trend of centralised living has long been identified internationally, particularly in Europe. Overseas practices have subsequently been incorporating principles of increased density into new designs, resulting in a wave of innovative housing models being applied to both infill and development projects.

The Netherlands, for example, boasts abundant examples of residential developments which push the boundaries of houses per hectare. A key project, exhibiting a new, denser housing typology is the urban plan for Borneo-Sporenburg, in Amsterdam by West 8 + MVRDV [Fig. 1.02]. With a density of 100 units per hectare, “West 8 suggested new types of three-storey, ground-accessed houses deviating from the usual terraced house in being strongly oriented to the private realm by incorporating patios and roof gardens.” More than 100 architects were involved in designing the dwellings resulting in an animated streetscape composed of highly individual buildings. A variety of dwelling types are present within the development including three storey terrace houses and apartment blocks. The primary objective for West 8 with the design of the masterplan was to reverse the predominant social trend of middle-class families occupying suburban fringes while singles and couples-only inhabited dense urban cores. The masterplan was generated around the familiar attributes of single family dwellings – private outdoor space, ground level entrances, parking space, safety and individuality – resulting in the creation of a framework for high density living which reflects the demands of a conventional family household. “The development demonstrates that family housing is not incompatible with dense urban areas.”

Sluseholmen Canal District in central Copenhagen, Denmark, is a residential development of 1,000 dwellings and a density of approximately 117 units per hectare located on the South Harbour of the central city [Fig. 1.03]. The development consists of eight housing islands with town houses (of 4-7 storeys tall) standing side by side to form a series of continuous blocks. The main architects, Arkitema, provided the masterplan in conjunction with Sjoerd Soeters. Arkitema developed the shell structures of the town houses and composed design rules governing the proportions, materials and colours. Numerous
architects were then invited to design the facades using the design rules as a platform, resulting in highly individual houses with a visual identity and diversity of their own.\textsuperscript{21} Like Borneo-Sporenburg, the development’s overall vision comprises a unifying principle while achieving a sense of individuality for every dwelling’s occupants. Large courtyards and neighbourhood common areas are a vital design component of the overall development.

What is significantly special about these two projects is the ability to maintain a sense of individuality within a mass housing development. "In the best schemes the perception of anonymity in the ‘mass’ of a large development is replaced by clear identity of the parts, and the single unit within the part."\textsuperscript{22} Individuality is a key attribute in the lure of the conventional single-family house.\textsuperscript{23} Ground floor entry into each house teamed with private outdoor space and the provision of parking satisfy the demands of a conventional household and therefore attract a wide range of demographics, including families. The proximity and scale of each dwelling enables both developments to be read as a cohesive whole and implies the creation of a new neighbourhood, while the variety of building facades provides occupants with their own unique and individual dwelling. Going against the social trend where high density living is mostly suitable for singles and childless couples, these projects are demonstrating the compatibility between family housing and consolidated living.

international responses

01 setting the scene
“New Zealand clings to the periphery of western civilisation at the very edge of the world. Or does it? In a completely interconnected world we are now all living in the same broad daily reality. Ideas are transmitted instantaneously and globally through a now universal English language.”

Andrew Barclay, Principal and Executive Director of Warren and Mahoney’s Auckland Office, speaks of his attendance at the World Architecture Festival in the online article: *At the Edge, In the Centre.* He reflects on the place of New Zealand architecture in the world, noting that the emergence of Australasia has continued to gain real pace. He concludes that while Asia is fast becoming the new economic driver of the world, “Australia and New Zealand are the closest centres of ‘western’ design expertise.” Not only are we continuing to improve our design standards in light of the best in the world, but as the world’s ‘centre’ moves close to us, New Zealand is increasingly becoming one of the more desirable places in the world to live.

It has been suggested that New Zealand is a place of suburban dreams. This stems from the country’s English-colonial history, where single detached dwellings on a residential section had moralistic principles and were enforced in the physical layout of the first settlements. Such a layout was implemented to escape the ills associated with condensed living in urban industrial England. Such an anti-urban view was turned instead to the worship of nature: “In the new colony of New Zealand, this contrast between city and country could be reconciled if the country could be incorporated into the town, hence the popularity of the residential quarter-acre section.” Suburbia in New Zealand is typified by the composition of single family houses on their own area, land or section. This scenario conforms to the needs of the model family unit of two adults with two children and so suburbia was viewed as the ideal environment to bring up a family.

New Zealand’s culture and history is one “which has emphasised the moral and physical benefits of detached homes on the New Zealand front.”

01 setting the scene
on sizeable residential sections.”\(^2\)

Promotion of this culture continued right until 1984 when the Labour Government restructured the role of central government in New Zealand’s economy and society. In 1991 the Resource Management Act (RMA) emerged with the goal of ensuring the sustainable management of natural and physical resources and city councils were to prepare policies in response to the Act. From this period to the present, urban planning in New Zealand has shifted away from its historic promotion of “detached homes on sizeable residential sections”\(^2\) and “towards growth policies that seek to consolidate city development in all the main centres.”\(^3\) However the debate concerning sprawling urban development is not new: Auckland’s first comprehensive town planning proposal that specified the need to keep checks on the tendency towards uneconomic sprawling development was introduced in 1951 by the Auckland Metropolitan Planning Organisation (Outline Development Plan for Auckland).\(^3\)

Since the RMA, Auckland’s four cities have recent editions to their coordinated District Plans addressing issues of higher density housing in relation to sustainability as required by the act. Wellington and Christchurch City Councils have also adopted the concept of urban consolidation as their primary response to the sustainable management of urban growth.\(^2\)

We have been long thought of as an isolated nation, able to continue our developed lifestyles without concern for the state of the world. This may have been true in a historical sense but with the current development of technologies and the ease of mobility and international travel, we are fast surpassing our disjointed status and becoming closer to the thicket of the world’s trends and lifestyles choices. For example, the growth of life-style magazines and promotional activity exhibiting international trends has influenced people’s recreational choices and the style of their homes. Diversifying business opportunities and increasing consumption and leisure needs are seeing a boost in the tempo of life. As a result, increasing numbers of the population are relocating towards the inner-city in a bid to efficiently accommodate these new needs. This is particularly the case in Auckland and Wellington where infill has occurred and the conversion of central city office space into apartments has been popular.\(^2\)

Although the proportion of new apartments varies between cities, there has been a
significant emergence of higher density housing developments in New Zealand over the last decade.\textsuperscript{34}

The possibilities of an increasingly urban residential life are well under way when it comes to new developments in New Zealand cities. International approaches to sustainable issues are being reflected upon and adopted into our national planning policies. As a result, with the aid of technological advances, international influences are fast becoming more evident in our lifestyle choices, our personal trends and our design. Although geographically still at the edge, New Zealand is progressively positioning itself closer to the centre of the world.

A particular typology of higher density housing developments deemed an affordable and durable model for New Zealand urban areas undergoing intensification is medium density housing.\textsuperscript{35} According to Housing New Zealand Corporation (HNZC), the most common definition of medium density is: “Housing at densities of more than 150m\textsuperscript{2}/unit and less than 350m\textsuperscript{2}/unit, or 30–66 dwellings per hectare (dph). This definition is used by the majority of City Councils and the Housing New Zealand Corporation.”\textsuperscript{36} In response to the intensification policies in place in New Zealand, a report for HNZC on Best Practice in Medium Density Housing Design indicates that medium density housing is the answer in seeking a higher density housing model to meet the needs of the urban community.\textsuperscript{37}

While international examples like Borneo-Sporenburg, The Netherlands, push the boundaries on dwellings per hectare, the experience of such a level of high residential density is a new and somewhat foreign concept in New Zealand. Newer cities perpetually have much lower densities than older cities such as those of Europe.\textsuperscript{38} Changes made to the density in New Zealand urban areas will be gradual, “intensification is likely to occur in nodes, with other parts remaining at

\textbf{on the New Zealand front}

\textsuperscript{01} setting the scene
lower density. Typologies of medium density housing, such as the detached laneway, terraced housing and mews, have comparatively more attributes reminiscent of low density suburban housing than that of high density typologies, such as high rise apartments. While repetitive in nature, identification of the single unit within the mass of housing is likely to be clearer in medium density developments than those of high density. This reflects the individuality associated with single-family dwellings in the suburbs. It seems medium density housing is therefore an appropriate intensification model for a nation whose cultural attachment to low density suburban living still prevails.
Christchurch is the third largest urbanised area in New Zealand.\textsuperscript{41} Christchurch’s resident population in 2010 was 390,300. The population is projected to grow to 501,000 by 2026. The predominant transport vehicle is the private motorcar making up 80\% of all (non-walking) trips. Dispersed growth in Greater Christchurch has resulted in a loss of connectivity between living and working. Greater Christchurch has significant natural resources. Landscapes of outstanding natural features, amenity and ecological value are under threat from unconstrained urban growth. Changing demographic compositions indicates that fewer people are expected to live in each household, with more people living alone. The number of households is predicted to increase at a rate faster than the population. Recent examples of housing infill have raised issues about the loss of open space and greenery. As population and dwelling densities increase, quality open space is becoming increasingly scarce.\textsuperscript{42}
Christchurch proves a unique case study site through the lens of urban consolidation. Its form represents perhaps the least convincing of New Zealand’s main centres for the compact city model and therefore provides an interesting platform for a design project which aims at reinventing the status quo and creating new and exciting streetscape visions. Christchurch epitomises the sprawling city with the legacy of Godley and Wakefield reflected in the prevalence of the quarter-acre section for the past one hundred and fifty years. Aided by its international image of the “Garden City,” Christchurch has experienced much lower densities than other New Zealand cities. Its location on the Canterbury plains evokes an illusion of abundant flat land available for endless development. This perception has been the driver of prior suburban growth and results in the sprawled form of the city today.
In response to population increase and the desire to impose principles of sustainability upon the city, Christchurch City Council has adopted the concept of urban consolidation as their primary objective managing the urban growth of Christchurch;

"Studies undertaken by the Council point to urban consolidation being the most sustainable urban growth option. The studies concluded that consolidation is more energy efficient and has the least adverse effects on natural resource values, such as water quality, versatile soils and outstanding landscape values, through selective restraint on peripheral development. Compared with other options urban consolidation is also the most cost effective means of servicing future urban growth."  

Fig. 1.04 reflects this policy in an abstracted analogue: Urban expansion of Christchurch City is happening in a way that can be likened to sound waves emitted from a source and travelling through a medium. The sprawl of suburbia encompasses the landscape in an unbounded fashion but where are the limits of growth? When a sound wave hits an interface between two media it is reflected and returns back towards the source. In identifying the need to implement principles of sustainable urban growth, the Christchurch City Council have identified the need to redirect development back towards the centre (or the source) of the urban form. This is reflected in their urban consolidation policy. Physical barriers of the Port Hills to the south and the coast of Pegasus Bay to the east provide feasible limits to the dispersed city. In addition growth limits to the north and south-west of the city have been determined as displayed in The Greater Christchurch Urban Development Strategy, a framework for the provision of strategic direction in growth management planning. A guiding principle of the strategy in regards to managing growth is in "defining and maintaining clear boundaries between urban and rural areas." Dispersal of the current city has resulted in diminished connectivity between living and working as people located in suburban periphery areas are travelling increased distances to get to work, social and leisure destinations.
While Christchurch sets the scene as a case study site, it will not be alone in the analysis stage of the thesis where observations into residential streetscape scenes are undertaken. Population pressures on the city have not been experienced to the same extent as other major New Zealand cities, particularly Auckland. Auckland shares 33.4% of the national population with its growth rate at 1.6% per annum and maintains a dominant position in New Zealand’s economy, contributing around 35% of New Zealand’s GDP annually. The future social, economic, environmental and cultural objectives for Auckland City have been documented in Auckland Unleashed: The Auckland Plan Discussion Document, recently released in March 2011. This strategic planning document emphasises the dominant position of Auckland within New Zealand on an economic, spatial and environmental level. Auckland Unleashed identifies three top spatial priorities, one being an opportunity for Auckland to grow an “International City Centre.” These are planning priorities intended to lift Auckland’s performance as “New Zealand will be looking to Auckland to contribute more as we deal with the dynamic changes of our environment.”

Auckland’s leading role in New Zealand means it has the potential to pave the way in terms of successful growth management principles. Pressures to implement strategies of sustainable growth are perhaps felt with a greater sense of urgency than experienced in Christchurch City, and Auckland City is used as a secondary case study in Chapter 04. Due its status, Auckland could perhaps be an initial testing ground for the implementation of visionary higher-density environments and therefore it seems valid to analyse its residential streets in a similar fashion to those of Christchurch. While the visions created in this thesis are generated from a Christchurch City context, an analysis of Auckland’s residential living zones in comparison, will allow similarities to surface that will in turn promote the transferability of these visions.
As previously discussed, the world’s population rise is a very real and confronting issue, although the scale of change as a result of increased urbanisation differs from location to location. Some cities, particularly in Africa and Asia, are faced with immediate issues in accommodating for an urban population which will double between 2000 and 2030.\textsuperscript{51} For other cities the issue may not be as pressing as they face a slower and steadier rise in comparison, such as those within New Zealand: “New Zealand’s population is projected to eclipse 5 million in the mid-2020s (estimated resident population at 30 June 2009 is 4.32 million).”\textsuperscript{52}

In addition, specific concerns for policy makers vary from country to country. Policy makers in cities of Africa and Asia face human rights issues such as finding solutions to advance social development (including promoting gender equity and equality) and solutions for the use of urban space to reduce poverty. Meanwhile, the most pressing policy initiative for planning authorities in New Zealand concerns protection of the environment and sustainable management of natural resources. Christchurch city and other national cities alike have conformed to promotion of a consolidated city form in advocacy of New Zealand’s Resource Management Act (1991).

It is perhaps unrealistic to assume that eventually the entire population will adhere positively to urban consolidation strategies. While Christchurch City Council is keeping in step with planning authorities nationwide, their policy for urban consolidation is being met by opposition from a significant part of the population. Many Christchurch residents are not seeing the benefits of consolidated urban living; instead they associate infill housing (as a solution to creating a more compact urban form) with negative effects such as loss of open space and greenery and reduced community spirit.\textsuperscript{53}

Though encouragingly, some of the population see consolidated living in a positive light: “The results show that there are both sources of support for, and opposition to, infill housing... Those already living in infill housing were more inclined to see
Andres Duany, Elizabeth Plater-Zyberk and Jeff Speck,

"a sprawling, repetitive, and forgettable landscape has supplanted the original promise of suburban life with a hollow imitation."
infill housing in positive terms, while those living on residential quarter acre-type sections were quite reliably opposed.\textsuperscript{54} Sentiments of the quiet life in suburbia on a quarter acre section are consistent throughout New Zealand’s post-European housing history and it is unlikely that sudden change will happen in the short term.\textsuperscript{55} It seems that the most promising step forward in obtaining a reasonable level of support from local residents is in replacing these negative connotations of consolidated living with positive visions. The realm of design can offer specialised solutions for such a task.

Increased density does not have to mean loss of amenities. For Christchurch residents, loss of open space and greenery\textsuperscript{56} appears to be one of the biggest misunderstandings contributing to these negative connotations, and this is seen most clearly in concern for the loss of the “Garden City” image which residents believe would result as a consequence to consolidated living.\textsuperscript{57} This negative perception on the form and composition of the compact city landscape is something which needs to be overcome and the discipline of Landscape Architecture has a central role to play in this turn around. Interestingly many residents believed that one such social-cultural effect of consolidated urban living is the reduction of neighbourliness and community spirit. It seems hard to believe that the level of ‘neighbourliness’ can diminish any further from what we currently find in many suburban areas today [Fig. 1.05].
Design becomes fundamental to the implementation of compact city features within our urban areas, “unless cities are perceived as high quality environments there is little chance they will ever be sustainable.” Infill and intensification of the built form fit within the discourse of Urban Design due to the requirement for ‘holistic’ design thinking and the contextual issues inherent with such sites. The value gained through good urban design offers significant benefits to economic, environmental, social and cultural realms. Consolidated developments of good (urban) design can vitally conform to community values and international evidence of this is cropping up in medium density housing developments.

The Commission for Architecture and the Built Environment (CABE) was set up in the United Kingdom in 1999 “to help decision-makers and professionals to create great buildings, places and spaces, and inspire public demand for good design.” CABE supports UK governments, particularly at the local level, offering advice and strategic thinking both before and during the design process. CABE’s design review panel, comprising architects and other built environment experts, assesses the design standard of the built environment from architecture through to urban design and public space. While CABE admits that definitions of quality in design are ambiguous, they strongly believe it is possible to distinguish good design from bad design: “by good design we mean design that is fit for purpose, sustainable, efficient, coherent, flexible, responsive to context, good looking and a clear expression of the requirements of the brief.” According to CABE, one of the keys to a successful project is in achieving an understanding of its physical context; the street, the neighbourhood and the town or city. “By design” (produced by CABE and the Office of the Deputy Prime Minister, now the Department for Communities and Local Government) is a document on urban design issues and highlights the following aspects to consider in project analysis; “Urban Structure: the framework of routes and spaces, Urban Grain: the pattern of blocks and buildings, Landscape: shape, form, ecology and natural features, Density and Mix, Scale: height and massing, Appearance: details and material.”
the shared space street character generates re-claimation of public space for people. dwellings address the street and the street address the community. such a dialogue indicates the way in which landscape becomes the design driver for high quality residential envionments.

“copyrighted image”
In response to the above criteria, the following housing developments are case studies assessed by CABE and listed as examples of excellence. They showcase good quality medium density housing developments (as defined by New Zealand’s classification of medium density: 30–66 dph) with particular reference to their street and open space attributes:

**Newhall Phase One**  
Essex, England  
*Density: 35 dwellings per hectare  
Designer: Roger Evans Associates*

The quality achieved to date in the first phase of this master-planned development "represents an impressive advance for UK residential street design." A shared space character is adopted in the design of the street with the deliberate use of paving and planting of trees to blur the boundaries between carriageway and footpath. Residents have reported a high level of festivity in the streets and public spaces, generating a civic quality to the estate. Newhill provides an exemplar for the social potential of quality streetscapes and illustrates the importance of collaborative design work between architecture and the streetscapes to encourage communal activities.

**Accordia**  
Cambridge, England  
*Density: 47 dwellings per hectare  
Designer: Feilden Clegg Bradley Architects  
Landscape Architect: Grant Associates*

The masterplan for Accordia is strongly oriented upon the creation of a high-quality landscape environment. “The public landscape offers a hierarchy of spaces and uses across the site, providing a sequence of quite different environments, characters and functions to encourage use and enjoyment by residents.” Many houses back onto semi-private green spaces whereas others back onto large communal lawns. Footpath and cycleway throughout the scheme provide a permeable...
circulation network and promote walking and recreation. An integral part of the housing development was design of the streets, parts of which acquired a shared surface character. The street network amalgamates with the extensive use of public green space, providing easy access to these areas. The Accordia development demonstrates how "New ideas in designing streets and layout can give a real sense of place."  

Density: 40 dwellings per hectare  
Designer: Mecanoo Architects

This sustainable housing development “uses terraces and communal decks to foster a strong sense of community.” Houses are grouped on peninsulas, each with a double ground level - the lower level is paved for cars, while the upper level of each dwelling opens up onto a shared wooden deck. Trees grow up through holes in the deck and ‘jungle’ bridges are hung providing children with an adventurous play area, segregated from the cars below. The provision of individual gardens for each dwelling and access to communal decks and green open spaces makes for a well-balanced public/private living environment.

Reflection of the value of quality design within New Zealand is promoted by the Ministry for the Environment. A report made into the Value of Urban Design delved into the benefits urban design might offer in a New Zealand context. The report revealed various kinds of value (economic, environmental, social and cultural) can be accrued as result of specific urban design elements, including “Local Character, Connectivity, Density, Mixed Use, Adaptability, High Quality Public Realm, Integrated Decision-making and User Participation.” These elements are in close correspondence with the Urban Design Protocol, launched in 2005 as "a platform to make New Zealand towns and cities more successful through quality urban
Successful schemes of consolidated living in New Zealand will be those that resonate with the transcendent principles of good urban design. Prevalence of quality urban design and diversity of intensive housing options is crucial if the goal of a more compact form is to be achieved, “bad examples of new styles of housing, such as apartments, have put Aucklanders off investing and wanting to live in this form of housing.”

Medium density housing is capable of providing residential environments of excellent quality throughout New Zealand while contributing to the building of sustainable communities.

Evidence in the success of good quality medium density living can be seen in numerous developments throughout the city. The Ministry for the Environment, like that of CABE’s design review panel, has released case studies of various housing developments which demonstrate the urban design qualities in the New Zealand Urban Design Protocol. The cases investigated display the benefits that come from good design practice and showcase a diversity of project types from locations all over the country. One such example is described below:

**Beaumont Quarter**
Freemans Bay, Auckland

**Density:** 240 dwellings with a gross density of 1:100m.2  
**Designer:** Studio of Pacific Architecture; Boffa Miskell

Beaumont Quarter redefines the traditional terraced house with a modernist stance resulting in a medium density development of alternative housing forms and pedestrian-oriented public and semi-public spaces. A small cafe and facilities such as an indoor swimming pool and gymnasium have been integrated into the development, offering residents an enhanced live-work-play lifestyle. The development has been commended for its provision of a unique network of pathways, narrow streets and small squares advocating priority to pedestrians.

**positive promotions**

01 setting the scene
a richness in the variety of private and communal open spaces indicates how landscape, as design generator, can convey the 'single family dwelling' as a malleable form of density. suburban individualism is convincingly presented as a new form of collectivism.
These exemplary projects are the types of medium density housing visions that should be conveyed with any development promotion. These projects exhibit a strong landscape position which has generated the project masterplan. The provision of high quality open spaces that resonate with the desires of their occupants has been central to the design of these developments. The masterplan of Accordia was driven by the overall design concept of 'Living in a Garden' as devised by Grant Associates. The hierarchy of large open spaces have each acquired a unique function or theme, offering different opportunities for recreation and play. While the concept masterplan for Newhill Phase One focused on creating an exemplar for the social potential of quality street spaces within a residential context.

Innovative solutions of increased living density have also meant little compromise for residents making the transition from the conventional single-family house. When considering moving to a new housing development of medium density, the public need not carry with them preconceptions of high density living equalling a loss in adequate open space. These projects display how consolidated housing developments can offer well-maintained and easily accessible communal open spaces, which are likely to be of a higher quality than the general quarter-acre backyard. The Mecanoo Housing project exhibits how the creative integration of cars can be achieved without encroaching on communal space for children to safely play. Gardens are assigned to individual units in a convincing effort to rally the 'single family dwelling' as a malleable form of density. Potential residents of these consolidated living arrangements need not give up the desire to maintain a sense of uniqueness either, as these projects, such as the Beaumont Quarter housing development, demonstrate how diversity of housing forms and typologies, work to maintain a sense of individuality to each dwelling.

Beaumont Quarter is a large inner city development of which its credentials lie in the project's pedestrian-oriented design. The succession of narrow pathways and adjoining squares come together in a layered or terraced arrangement as a result of the site's contoured topography. This dense network of open spaces provides for an interesting and varied journey for one
making their way through the site. Enhanced by the presence of narrow streets, the ambience within the development is one of pedestrian priority and this is further emphasised by the orientation of individual dwellings, where the vast majority of ground-floor houses face the public open spaces - enacting a community dialogue. Visually permeable boundaries between dwellings and communal open spaces encourage social interaction both amongst neighbours and visitors.

In all these exemplary projects, the richness and variety of outdoor living spaces, both private and communal in nature, communicate how landscape can propagate a high quality, high amenity living environment. Design of the streetscape, as a vital open space artery, is paramount in promoting the benefits of consolidated living. The street composition is generally taken for granted, with little variation within cities and even between cities of the world. Innovative housing solutions are abundant and display one way of enhancing and creating quality living developments. Emphasis is now needed on the role of street space design to produce innovative solutions, stepping beyond the boundaries of the status quo, for quality living environments; innovative streetscapes of their own creative expression [Fig. 1.10].

"The time may soon come when planners, designers, developers and others will recognise and act on the simple notion that the spaces between buildings are as important to the life of urban man as the buildings themselves."

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setting the scene has provided an overview into the issues of sustainable growth management worldwide and also on a national level. New Zealand cities are adopting the concept of urban consolidation into their planning policies in response to the sustainable management and protection of our natural environment. Medium density housing is emerging as an alternative residential typology to low density suburban form. This movement is being met by opposition from many Christchurch residents who are associating infill housing (as one form of medium density development) with negative effects such as loss of open space and greenery and reduced community spirit. Various international examples have in fact shown that greenery and open space amenity can be enhanced with such developments. Landscape principles are established as the initial concept generator of these designs and the result is the creation of high quality living environments, attractive to inhabitants of varying demographics. This chapter departs from the notion that Christchurch residents need evidence that medium density living does not necessarily mean loss of landscape amenity. Their negativity can be swayed with the promotion of landscape oriented visions of higher density living which display enhanced landscape environments.
notes

01 setting the scene
18 www.west8.nl/projects/master_plans/borneo_sporenburg [March 2010]
20 Ibid
25 Ibid
26 Ibid
29 Ibid
31 Ibid
32 Ibid

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About Council/Plans Policies Publications/theaucklandplan/discussiondocument/Pages/home.aspx [April 2011]

49 Ibid
50 Ibid; p28
53 Ibid; p43
55 Ibid; p43
56 Ibid
57 Ibid; p5
62 Ibid

notes

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a departure point looks specifically at the urban morphology of Christchurch City as a case study and where medium density zoning lies within its current urban form. This Living 3 (medium density) Zone is crucial to the city’s urban consolidation policy as it represents the area designated to accommodate higher density redevelopment and infill. This location is significant when considering a context for the emergence of new landscape visions advocating quality higher density living. Within the urban residential environment, landscape epitomises the space between dwellings; the open space. Visions of how landscape is portrayed in medium density environments are crucial in helping gain acceptance of consolidation from Christchurch residents. The Living 3 (medium density) Zone becomes the site for the design research phase of this thesis. The site, titled “the Living Ground,” represents a medium density context from which to generate new scenarios of quality living environments.
“Internationally famed The Garden City, Christchurch’s well-established expansive parks and public gardens owe much to the planning and foresight of the city’s founding fathers”

Christchurch City Council: http://www.christchurch.govt.nz/about/gardencity.asp
“Internationally famed ‘The Garden City’, Christchurch’s well-established expansive parks and public gardens owe much to the planning and foresight of the city’s founding fathers.”¹ Christchurch City’s urban form is the result of its British colonisation history, enforced by the Canterbury Association in the 1840’s under the guidance of lawyer John Robert Godley and colonisation theorist Edward Gibbon Wakefield. A geometric grid oriented by the north-south axis generated the original city form. This formal layout reflected planning ideals of England at the time Christchurch was established. The abundance of flat land teemed with colonial veneration towards nature and its incorporation into town, saw the prevalence of the residential quarter-acre section. Suburban growth retained this style of large single-family dwellings on substantial lots and personifies the urban landscape of Christchurch City today.

The City’s geographical positioning upon a flat and exposed topography meant that there was no sense of enclosure and protection from the elements. Planting trees and creating gardens of enclosed spaces was important in the eyes of the immigrants as it rendered an open landscape pleasant and inhabitable on English terms.² This fostered a strong tradition of home gardening for Christchurch residents. The extensive parks, public gardens and notion of home gardening, owing to the early efforts of the City’s original planners, contributed to winning the title ‘Garden City’ at the 1906-07 Christchurch Exhibition.³ This image transcends the City’s history to epitomise its identity today. In 1997 Christchurch was judged Overall Winner of Major Cities in the Nations in Bloom International Competition to earn the title Garden City of the World.⁴

Research undertaken in Christchurch by Vallance et al,⁵ which investigated neighbours’ interpretations of and responses to infill housing, revealed that two concerns in particular were discussed at some length by residents, the importance of open space and of trees and greenery were two variables seen as having a detrimental effect on the neighbourhood. Their conclusion highlights that many residents are still passionate about the Garden City image: “the overarching guiding vision of the Garden City image appeared to become all the more important, and the interviewees were generally vehement about the need to protect the Garden City.”⁶

urban form + identity

02 a departure point
In response to the many challenges brought about by growth to the Christchurch area [Fig. 2.01], a project was initiated in 2004 by Christchurch City Council, Environment Canterbury, Selwyn District Council, Waimakariri District Council, and Transit New Zealand, in a collaborative effort “to manage growth in a sustainable way in the subregion. With a long-term outlook to 2041, the Strategy provides a comprehensive context for making decisions now for present and future generations.”

The Greater Christchurch Urban Development Strategy (UDS) sets up a framework for the provision of a primary strategic direction for growth management in the greater Christchurch area. A primary outcome the Strategy outlines in regards to managing growth is in “redeveloping existing urban areas in a more concentrated form and providing for new urban development that is well integrated with existing urban areas and towns.” The Strategy proposes that if intensification targets are to be met 45% of all new housing will be in intensification areas over a 35 year period. After 2026 “when the proportion of growth in Christchurch City increases, 72% will need to be housed within the Central City and activity areas.”

The RMA requires local authorities to prepare city plans and policies in response to the Act’s promotion of the sustainable management of natural and physical resources. Christchurch City Council’s City Plan deals with their function under the RMA by promoting the policy of urban consolidation. This discourages development on the urban fringe of the existing built form and encourages consolidation and infill within existing urban areas.

The City’s living zones take on a centrifugal form where high residential density is located within the central city radiating outwards to low residential density on the periphery of the urban fabric [Fig. 2.02]. The Council have identified an opportunity for the Living 3 (Medium Density) Zone to principally accommodate the policy of consolidation. This zone fashions a ring around the central city, between the high density city living and the low density suburbs and so its positioning makes it ideal to facilitate new housing infill. In the City Plan, Living Zones 4A, 4B and 4C all provide for and anticipate medium-density
Living 4A, 4B, 4C (Central City) Zones
Living 3 (Medium Density) Zone
Living 2 (Inner Suburban) Zone
Living 1 (Outer Suburban) Zone

Central City
high and high density residential development. However it is specifically within the zone description for Living 3 (Medium Density) Zone that policies for urban consolidation are prescribed: “it is anticipated that the zone provisions will encourage diverse residential development, redevelopment and infill to medium densities.”\textsuperscript{10} In addition to this policy the Council have also identified an opportunity for new housing developments of medium density on fringe suburban areas; “...such large sites enable the inclusion of a core of medium density housing as part of a comprehensively designed ‘urban villages’, and provide greater housing choice. This also promotes more self contained communities with better scope for cycling, walking and public transport.”\textsuperscript{11}

There exists no standard or universal definition for the term ‘medium density’. Within a New Zealand context and according to a report on \textit{Best Practice in Medium Density Housing Design} for Housing New Zealand Corporation (HNZC), the most common definition of medium density is as follows: "Housing at densities of more than 150m\textsuperscript{2}/unit and less than 350m\textsuperscript{2}/unit, or 30–66 dwellings per hectare (dph). This definition is used by the majority of City Councils and the Housing New Zealand Corporation."\textsuperscript{12} To view density in technical terms is to invoke principles of measure. Urban density in this sense is an analytical tool for examining the built-form in its three-dimension presence. A variety of indicators are commonly used for measuring physical density in relation to a total area of land, such as dwellings, inhabitants, rooms, total floor area, total available built area + floor space index (FSI). To measure built form density in such a way however, does not thoroughly describe the spatial properties within a particular form.

The \textit{Spacemate},\textsuperscript{13} a diagram devised by the Dutch research team of Meta Berghauser Pont & Per Haupt, is a set of additional measures which evaluate the spatial layouts and programmes of a building [Fig. 2.03]. They introduce three more variables to be used when expressing built space: Ground Space Index, GSI (the amount of built ground in an area), Open Space Ratio, OSR (intensity of use of the non built ground) + Layer, L (average number of floors in an area). The appended measures
The FSI (Floor Space Index) computes the gross floor area relative to the land area, indicating site intensity.

\[
FSI = \frac{\text{gross floor area}}{\text{plan area}}
\]

The GSI (Ground Space Index) conveys the relationship between built and non-built space, reflecting the compactness of an area.

\[
GSI = \frac{\text{built area}}{\text{plan area}}
\]

The OSR (Open Space Ratio) is the amount of non-built space at ground level and expresses the openness and pressure on the non-built space.

\[
OSR = \frac{(\text{plan area} - \text{built area})}{\text{gross floor area}}
\]

\[
L = \frac{\text{gross floor area}}{\text{built area}}
\]

L stands for the number of floors in an area.
suggest that density not only be defined as intensity but inclusively as a description of compactness (GSI), height (L) and pressure on non-built form (OSR). New typologies emerge of built form conjoining plot, street and block, now that OSR is brought into examination. This generates a wider scope for measures of density and reflects more accurately the varying perceptions people have on the acceptance of density.

The individuals’ acceptance of density is dependent on background and cultural experience and this affects their perceived measures of quality and liveability. For many Christchurch residents who have the suburban dream engrained in their mentality, intensification may be perceived as a threat to the quality of their environment as they know it. Images of consolidation/increased density/infill housing are adversely affected by this acceptance of the suburban identity enduring from colonial settlement. It is clear that open space and greenery is highly valued by residents as spatial practices such as “backyard cricket, vegetable growing, flower gardens, outdoor barbeques, playing with pets” are embodied in the Kiwi culture.
Open space, green space, outside space and greenery\textsuperscript{15} are terms representative of the space between buildings (the landscape) and they become vital spaces for living as density increases. The perceived trade-off between density and loss of open space is a hindrance to the positive promotion of consolidated living environments. While reductions in private backyards are often a result of increased density, the street space can offer compensation for this loss in unique and vibrant ways. Open space will always be inherent with urban consolidation in the form of the street and that in itself is an attribute of high value. The way in which the street space is utilised can offer vibrant opportunities for an alternate way of living.

"When sites are redeveloped in older parts of the city, it is vital that the new buildings are designed in a way that will respect and enhance the established neighbourhood."\textsuperscript{16} This is the opening statement in the Design Guide: New Housing in Living 3 Zones produced by the Environmental Policy and Planning Unit of CCC (1999). This guide offers a checklist for design professionals and developers when proposing a new housing development of medium density within the Living 3 Zone of the Christchurch City Plan. Aspects of design are promoted in this guide as a means of achieving well designed developments that are visually uplifting and result in desirable neighbourhoods. Building design composes Part Two in which differing housing typologies are looked at in regards to scale, privacy and safety. Part One compiles site selection and planning which touches on one aspect of open space; "Maximising Greenness"\textsuperscript{17} but is largely geared towards building positioning, orientation and parking. Part Three, the final part of the guide, is contributed to “Outside Areas.”\textsuperscript{18} Hard surfaces, planting and fences are the only three components touched upon and ever so sparingly.

There are no in depth recommendations that offer visions of uplifting, desirable or quality open spaces which will enhance the established neighbourhood as so conformed to in the introduction of this document. It could also be concluded that the promotion of a rich and vibrant streetscape vision is void in both visual and written material accompanying the Infill policies in Living 3 Zones.
The association between quality designed environments and open spaces seems to be missing from material promoting the implementation of urban consolidation. Streets, roads and pavement policies exist to allow Council to control and regulate the design and construction of streets. But they are not visionary. The status quo does not encourage new meanings and uses to be assigned to street spaces. Advocacy of the street to accommodate uplifting, desirable or quality open spaces underpins the direction of my thesis in the way that it challenges perceptions of the street and seeks to unleash alternative visions for use of the space. If the streetscape can offer a platform for traditional spatial practices to be carried out, combined with visions of new undertaking, then perhaps the current perceptions of loss associated with urban consolidation can be overturned?
In contextualising the grounds for the impending design phase, a more specific location within the area of Christchurch City is commissioned as the site for design experimentation. Drawing on the key theme of urban consolidation and CCC's identification of the Living 3 Zone to principally accommodate this policy of consolidation, the ring of medium density zoning around the central city becomes the context for the design experiments pursued in Chapter 06.

The parameters of this site resonate with the level of residential growth that seems acceptable to the local population. The transition from low density suburbia to the high density central city seems to be too great an impediment for a large part of the local population: "sentiments of the quiet life in suburbia on a quarter acre section are consistent throughout New Zealand's post-European housing history and it is unlikely that sudden change will happen in the short term." And so what lies between these two specified areas is land zoned L3: The Living 3 (Medium Density) Zone. The physical location of this zone stands as a metaphoric mediator between the two extremities of density present within Christchurch City [Fig. 2.04]. It is this land that sets the scene of generation for the design research phase; a platform from which to launch a new database of imagery promoting medium density living as a positive alternative to suburban life.

Formulation of this living ground site stems from a real-life context under which exploratory investigations are to be made. However in light of future research that may be conducted, the living ground site can be translated into a living ground scene: a hypothetical site allowing the methods and ideas produced in the design phase of this thesis to be adjusted and applied to fit any medium-density context. As noted previously, "Christchurch has not experienced population pressures to the same extent as other major New Zealand cities," such as Auckland, and so the design scenarios should ideally be translatable to other contexts within New Zealand.

design site: the living ground
02 a departure point
a departure point depicts the urban scene of Christchurch City and the place of medium density zoning within the city. This “Living Three” zone lies between the high density living zone of the central city and the low-density suburbs, metaphorically speaking as a mediator between the two extremities of density. The zone’s primary purpose is the development of medium-density residential living, which is met with opposition from residents, largely due to the perceived loss of open space and greenery. And so this area becomes an appropriate context for projecting new design scenarios of open space landscapes. Building on notions of landscape visions to generate high quality living environments, this chapter concludes by turning to the street as the fundamental landscape element which can drive these visions. For the streetscape epitomises the open space character of residential environments. The design site; “The Living Ground,” sets the scene for design explorations of streetscapes and how they might aid in manifesting quality living environments of higher density.
17 Ibid; p7
18 Ibid; p13
landscape, culture + street opens up a trail of thought about the relationships between housing, open space and streetscape. New descriptions of the contemporary landscape and the contemporary city have emerged from the work of theorists and practitioners the world over. The discussions offer a new lens from which to view the role landscape plays in creating our living environments, shifting attention to the role of landscape architecture in the formation of the urban environment. In light of this shift in perspective, the role of the street is reintroduced as the generator for new visions of residential living. An overview of the historical character of the street is given with narrative of its transformation from “place” to “movement corridor” in the advent of the motor vehicle era. Accounts of worldwide initiatives are then introduced to convey and the role of the street and street design within a contemporary and future context.
“the shift towards increased community-based housing... is re-mapping our landscape.”
“...landscape can also be seen as a tangible product of culture, with the phrase ‘cultural landscape’ being first coined to describe the physical result of human actions and interactions with the natural landscape over time.”\(^1\)

The policy of urban consolidation is most strongly linked to New Zealand’s housing sector where the concept is portrayed to the public in terms of housing form. Urban consolidation effectively means higher density living which is translated into housing typologies such as apartments, townhouses, terraced and mews housing. The possibilities of an increasingly urban residential life are being promoted by design solution documents delivered by local Councils. Such documents include *Design Guide: Housing at Higher Densities*\(^2\) (Housing New Zealand), *Residential Apartment Design Guide*\(^3\) (Manukau City Council), *Good Solutions Guide for Medium Density Housing*\(^4\) (North Shore City Council) and *Exploring New Housing Choices for Changing Lifestyles*\(^5\) (Christchurch City Council).

The design guide by Housing New Zealand offers generalised principles of design at higher densities (predominantly elements of good urban design) before offering guidance for the selection of higher-density housing typologies. Manukau City Council acknowledges that while traditionally, detached housing had made up the bulk of residential housing in Manukau this model alone cannot meet the needs of a diverse and growing population.\(^6\) Apartments as an alternative form of urban housing are promoted by the council’s Urban Design Group through an extensive design guide, offering guidance for achieving high quality designs of this housing typology. North Shore City Council’s design guide is geared to assist designers, developers and planners build better quality housing developments of medium density specifically. While the latter document looks at an array of new housing solutions for Christchurch City in response to the urban growth challenges of the twenty first century.

However, the dwelling is not the only component of residential living environments and therefore will not be the only...
component affected by urban consolidation strategies. We must realise that the spaces in between dwellings will be equally affected as a result of higher density living. A house does not exist in isolation; for it is part of a street, a suburb, a neighbourhood, a community. It is but one component of the cultural landscape.

Consider the statement made by Housing New Zealand Corporation (HNZC) in its May 2005 strategy:

“This Strategy is not just about shelter and free-standing homes. Housing is more than building houses: it is as much about building community as it is about people’s homes. This Strategy clearly shows a basic ‘bricks and mortar’ approach to housing has been superseded by innovative policies and practices taking account of wider social and economic needs. The shift towards increased community-based housing…..is re-mapping our landscape.”

Seemingly, the inclusion of the terms ‘community’ and ‘landscape’ in a statement on housing is to insinuate a shift in perspective; a shift in perspective from housing as a collection of single objects, to housing being a composite of a communal landscape. It can be concluded that the statement above articulates housing as a broader unit; being the home in alliance with the surrounding cultural landscape.
We are witnessing a shift in the role of landscape in the contemporary city and this is especially evident in the founding of landscape urbanism as an emerging discipline where “landscape has become a lens through which the contemporary city is represented and a medium through which it is constructed.” James Corner’s research into contemporary landscape has been central to portraying its increasing relevance for questions of the city and in turn to the formulation of landscape urbanism. He argues that only through the reordering of design disciplines might we have some grasp on the formation of the contemporary city. The following notions by international practitioners and theorists alike, exemplifies this shifting lens through which the city is viewed.

It is this conception of the urban environment underpinned by landscape that has gripped a new generation of designers, particularly European. Introduction of the term “SCAPE©” by Rem Koolhaas, “implies a reading of the urban territory as landscape.” This term prompts a hybridity of nouns such as town-scape and land-scape to form a singular expression rather than considered as separate entities. The urban landscape is perceived as a continuous topological surface where infrastructure, architecture and landscape merge. The works of architect Zaha Hadid lay testament to this merging of disciplines as she “considers her architecture as a form of landscape extension.” In her design for the Hong Kong Peak competition, the building is perceived as an artificial landscape. The hybrid nature of the structure takes on the form of a series of levitating planes, responding to the topographical characteristics of the site to become an extension of the mountain itself [Fig. 3.01].

Prior to the emergence of landscape urbanism over the last decade, support for this notion has historical antecedents. Such a thought trail can be traced back to the writings of landscape theorists’ pre-1980, as is presented by Meinig in “The Interpretation of the Ordinary Landscape.” Here he proposes the notion of “landscape as Habitat” where the landscape is a blend of man and nature; the dominant natural landforms dictate the wider topography and the presence of pastures,

**thoughts on the contemporary landscape**

03 landscape, culture + street
“copyrighted image”
thoughts on the contemporary landscape

03 landscape, culture + street

In addition, precedential design projects provide models, such as Parc de la Villette by Rem Koolhaas and the Office for Metropolitan Architecture (OMA), continue to be used in landscape urbanist literature. The design competition scheme has set a benchmark for landscape as programmatic generator rather than an aesthetic composition, where the design principle involved the superimposition of points of activity, lines of movement and spaces of disposition. James Corner suggested that the design might be more about the ‘processes’ and ‘strategies’ and less about the construction of completed works.

Individual settings are interconnected with and dependent on the boundless terrain that permits their existence. This leads to the notion that architecture and landscape are components of a single framework; a cultural framework that provides for and accommodates the richness and diversity of society. This inevitably gives rise to the relationship between the two fields of landscape architecture and architecture, raising questions as to whether the perceived distinctiveness between the two is really so constructive.

cities and suburbs reflecting man’s adaption to nature. Human creations of symbols, beliefs, languages, routines and rituals take place upon and within historically and geographically specific contexts. Another notion, proposed by Meinig is that of the “landscape as Artifact” - man’s presence is everywhere; “Nature provides a stage. The earth is a platform.” Nature is fundamental in the sense that it houses man’s interventions. Even the earth’s ecological systems are no longer natural or of pristine nature as they have been reformed and recreated as a result of human alterations to the landscape; cuts, excavations, dams, terraces, draining, plowing and cutting of forests. “So comprehensive and powerful had been man’s role in changing the face of the earth that the whole landscape has become an artifact.”

In addition, precedential design projects provide models, such as Parc de la Villette by Rem Koolhaas and the Office for Metropolitan Architecture (OMA), continue to be used in landscape urbanist literature. The design competition scheme has set a benchmark for landscape as programmatic generator rather than an aesthetic composition, where the design principle involved the superimposition of points of activity, lines of movement and spaces of disposition. James Corner suggested that the design might be more about the ‘processes’ and ‘strategies’ and less about the construction of completed works.

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topography

3.01 The Peak Project Competition, Hong Kong | Zaha Hadid (1982-93)

Original source: www.moma.org/collection
“copyrighted image”
The single cultural framework in which the two disciplines combine is described by David Leatherbarrow as *topography*. He suggests that landscape and architecture, while not the same nor entirely different, are similar to one another: “Topography is the topic (theme, framework, place) they hold in common. It not only establishes their similarity but also provides them with the grounds for their contribution to contemporary culture.”

The task of both disciplines, as topographical arts, is to apply dimension and expression to the routine patterns of our daily lives. While form and space are the subject matter of design for both landscape and architecture, the argument Leatherbarrow presents for their similarity is that their positions can be inverted. Methods and ideas once thought of belonging to landscape design have more recently been adapted to architecture: “phenomena of process or temporal unfolding, ‘registration’ prompting articulation, ‘mapping’ as a survey technique, and so on.”

The courtyard of Louis Kahn’s Salk Institute in California [Fig. 3.02] articulates a space where the geometries and nature of the landform has prescribed that of the building form. Just one aspect of this site requires consideration: the emptiness of the central courtyard. Distinguishing between landscape design and architecture in this particular example is difficult. Leatherbarrow states it is a well known fact that Kahn was perplexed by the design of this space for some time and resultanty sought the advice of Luis Barragan, who advised emptiness: “I would not put a tree or blade of grass in this space. This should be a plaza of stone, not a garden. If you make this a plaza, you will gain a facade - a facade to the sky.” Barragan’s landscape architecture is particularly known for its minimalist nature, of almost empty settings, and so here, in space of the Salk courtyard, reference to Barragan seems precise. The emptiness of the central courtyard, its “absolutely nothing” intention, evokes a stage like setting - a kind of interior: enclosed, but at the same time open to the skies and extending into the infinity of the Pacific Ocean. Above all, the topographical space reflects a piece of complementary work between the two disciplines of landscape and architecture.

**thoughts on the contemporary landscape**

03 landscape, culture + street
The topic of housing among the topographical arts is to be viewed as a contributing component to the dimension of daily life. Through this perspective, housing becomes less an architectural object and more an extension of the social and cultural landscape. For most of society, the undertakings of daily life begin at and end under the shelter of home. The progressions in between take place in the street, the neighbourhood, and into the greater surrounding network. The home is but one component which supplies dimension and expression to the patterns of our lives therefore it is paramount to consider the role housing plays in the wider cultural context. The concept of topography is used to summarise the re-thinking of housing development and implementation from a landscape perspective: “This is to say that the turn from architecture towards landscape enables one to reconceive the role that buildings play in a wider cultural context.”

These descriptions of the contemporary landscape, and subsequently the contemporary city, reflect a shift in the traditional thinking of landscape’s role in the formation of cities. The ideas and frameworks exemplified above lay a new ground poised to transform the roles of traditional design practices in the formation of the expanding city. This changing role of landscape as the design generator of the city is parallel to the notion of this thesis, where the streetscape is design generator of the residential environment. The role of the streetscape (street + house) as an element central to the creation of quality residential environments, embodies the idea of landscape as ‘artifact’, city as ‘SCAPE©’ and landscape + architecture as ‘topography.’ When considering how to improve the quality of consolidated living environments, we must consider how components of the landscape fit together to compose a cohesive artifact, a hybridization of traditional design disciplines. Too often has the revision of the built environment gone ahead in disregard to its adjoining open space, but with the introduction of the streetscape as the primary spatial driver in this thesis, new visions of medium density living environments begin to unravel.

thoughts on the contemporary landscape
The **streetscape** stands for the urban housing landscape by encompassing two major components: the occupancy of both the private realms, constituting the residential built form, and the public spaces that adjoins them, the streets.

Urban morphology of cities worldwide can be interpreted by the spatial organisation of their street patterns; from the irregular maze of the medieval city to the mismatched grids and curvilinear cul-de-sacs of the modern North American city. Street systems have shaped movement in cities and are departure points for understanding the form and function of urban environments. Streets, as the dominant form of city open space, provide insights into societal changes reflecting the ways in which human use of space has evolved. Pre eighteenth century, spaces between buildings served multiple functions and were vaguely defined. Streets of historic European cities catered for all aspects of public life; from pedestrian movement to social and recreational gatherings and events alike. The street was valued for its public space attributes and considered the setting for life, while the dwelling was merely a more sheltered and private part of the living realm.

The early nineteenth century saw that most American cities were organised around a grid system composed of rectangular blocks and straight streets. “Since its inception as a distinct profession, urban planning has been preoccupied with rationality and order.” As a result, streets have been designed to service the motor vehicle as transportation engineers understand streets as traffic thoroughfares: “unobstructed movement is the objective, and obstructions, whether stationary objects or people, are seen as impediments.” The commonplace notion of the street has been unable to endure due to incompatibility with fast moving traffic. Highway plans are structured on a hierarchy of arterial and feeder roads servicing principles of traffic flow. Within a contemporary context, the intention behind a residential street is to provide the connection between local and larger networks almost exclusively on a utilitarian level, "streets are constructed to be conduits rather than places."
Twentieth century developments saw manifestations of utopian city designs where emphasis was placed on central green areas, rather than streets, as places for communication. The eminence of the street diminished further as houses were "well set back, and if possible, divorced from streets." The appearance of the residential garage aided this separation. In the late 1960's the garage and driveway gained precedence at the front of properties, facing the street, "thereby causing the residential facade and front yard to all but disappear." This further diminished any sense of street life and the symbiotic relationship between house and street, as reflected in medieval streets, became largely void in the modern city.

In light of the contemporary nature of streets, it seems more appropriate to expel the term street in place for road. The origin of a road is to act as a line of communication; a path or way between two places; a journey to some end. Consider the multi-laned, fast-paced roads of today's landscape - for most people a road is merely a physical component of journeying from A to B. One gets in a motor vehicle with a particular destination in mind, and aside from the in-house company, there is virtually no interaction or communication with any other person beyond the vehicle. The connotation of road to the act of communication is predominantly on a private level.

While a street also encompasses these attributes of communication and movement, they occur on a more human scale. Allan Jacobs, in his book Great Streets, speaks highly of one residential street notable for its place-making attributes: Roslyn Place in Pittsburgh, Pennsylvania. Jacob's high regard for this particular street is evident in his opening statement of the chapter The Great Street We Once Lived On: "Step into Roslyn Place and you are likely to sense, immediately, that you are indeed in a place, a special place, a handsome place, a safe place, a welcoming place, a place where you might wish to live." Among the listed qualities of Roslyn Place which ensure it the title of a 'Great Street,' is the narrowness of its carriageway. No garages accompany the housing which forces cars to park on the street. The movement function of Roslyn
Place is reduced to a narrow traffic lane framed by parked cars. “One doesn’t drive fast on a street like that.”

Streets and roads are always passageways; the difference is whether that is all they are. “The place function is essentially what distinguished a street from a road. The sense of place is fundamental to a richer and more fulfilling environment. It comes largely from creating a strong relationship between the street and the buildings and spaces that frame it.” The balance between place and movement functions of a street is fundamental in determining its character. The question then is how much exclusion of the movement function should occur (if any) for the place function to transcend?

This thesis emphasises the need to reassert eminence of the streetscape as a place for vibrant neighbourhood life. Resurrection of the symbiotic relationship between house and street is sought where the street once again becomes an extension of the house and subsequently the street becomes a dominant space in the setting for life.
“UNOBUSTRUC TED MOVEMENT IS THE OBJECTIVE, 
AND OBSTRUCTIONS, WHETHER STATIONARY OBJECTS 
OR PEOPLE, ARE SEEN AS IMPEDIMENTS.”
“THE STREET, VALUED FOR ITS PUBLIC SPACE ATTRIBUTES
AND CONSIDERED THE SETTING FOR LIFE.”
Local streets should prioritise pedestrians and cyclists. Local streets can become an extension of the resident’s usable open space. Streets and public spaces for pedestrians are vital to people’s quality of life. “We are not anti-car but by a gradual and subtle process the eviction of the pedestrian from our roads and streets proceeds, streets are first and foremost for people.”

The Living Streets Charter requires a policy where all streets are for living. Inviting people to walk rather than use their cars makes streets more alive and interesting. Walk-ability improves property values, health outcomes, community coherence and community resilience. Too many of the neighbourhoods where people live are structured around cars. This needs to change. The aim is to design inclusive streets rather than spaces for vehicle movement.
In response to conflicting dialogues between attributes of ‘street’ and ‘road,’ initiatives have surfaced worldwide where communities are working to reclaim their neighbourhoods from car dominance and return occupancy of street space first and foremost to people. The Pedestrian’s Association was established in the United Kingdom in 1929, in response to the new era of widespread motor vehicle use in a bid to protect the rights of pedestrians. The Association became “Living Streets” in 2001 as a new campaigning ledge and identity launch for future progress. Living Streets carries forth the central ethos that pedestrian rights and desires affect people’s quality of life, and working under the ideal of “Revitalising Neighbourhoods, Reconnecting People.” Campaigns of the Association are generated around the proclamations that streets are not just traffic corridors but are to be understood as people friendly public spaces. The Association promotes action to revitalise local communities, and provision of the right environment and quality conditions for people on foot.

The “Woonerf” is a concept of Living Streets implemented in the Netherlands in the 1960’s and still prevalent in Dutch cities today. Woonerf takes on the form of a common space which is shared by pedestrians, cyclists and motor vehicles, albeit travelling at low speeds; the former two however have legal priorities over motorists. It is common in residential areas where private space is limited due to high density. The street functions as a public living room where residents gather and children play safely as a result of slow vehicular movement.

Advocating for Living Streets can also be found within Australasian local government authorities where councils are investing in the creation of new living streets and in the implementation of living street principles into existing streets. In simple terms “… the most salient feature that distinguishes ‘living streets’ from others is that ‘living streets’ change the priority between people and cars, by giving people who live, work and visit in the streets greater measure of priority along with cars.” Leichhardt Council in New South Wales, Australia, has received a grant of $250,000 to create a Living Street in the Local Government Area. Taylor Street has been nominated as the pilot project and will witness a transformation from

**living streets**

03 landscape, culture + street
a vehicle oriented corridor to "a place where the street has been returned as a community asset.""48

Christchurch City Council accepted a “Living Streets Charter” as a guiding policy framework for new street development and renewal in 2000. The Charter’s mission is in creating living streets, where a variety of roads encourage more street activity and community.49 Such “Key Results Areas” of the charter involve; “Ensure crossability and accessibility for cyclists, pedestrians and vulnerable road users,” and “extend the range of effective tools for local streets to meet community needs.”50 Peverel Street in Riccarton is considered the pioneer “Living Street” in Christchurch51 whose design is generated around traffic calming, increased pedestrians areas and the provision of comfortable spaces for rest [Fig. 3.05]. Use of local stone, native planting and artwork all work to create a sense of identity, strengthened by the exposure of a pre-existing underground spring and natural stream. Reference to the historical landscape of the site is captured in the design of the pedestrian realm, where the surface treatment reflects the braided river system that once flowed through the area [Fig. 3.06].

The Commission for Architecture and the Built Environment (CABE) set up a specialist unit in 2003, CABE Space, to help private and public organisations understand the benefits of well-planned, designed and managed public space. Among their published good practice guides is one titled “This Way to Better Residential Streets.”52 Once again it is acknowledged in this document that for the past 50 years, streets have been designed around accommodation for cars. “Things have to change – we must not let the car dominate when a well designed street can help create sustainable communities... promote walking and cycling... and allow the community to interact.”53 This document builds on the notion that new residential developments are not producing street designs which aid in creating quality living environments for all residents. None of the case studies that feature in the document “shows as much concern for ‘inclusive design’ as we would expect today.”54 CABE Space defines ‘inclusive design’ for residential streets as creating accessible streets that support walkability and encourage
social interaction between neighbours and the community.\textsuperscript{55}

It is clear that there is the desire and support for the creation of streets which oppose the dominance of the motor vehicle and instead looks to squeeze them out. But is what we’re seeing on the ground evidence of a real desire to reclaim residential streets for people? Or is the implementation of ‘Living Street’ principles achieving no more than a compromising act between pedestrians and the car? As concluded by CABE’s case study investigations of residential streets, “there are big improvements still to be made in street design.”\textsuperscript{56} The masterplan of Taylor Street, Leichhardt’s Living Streets pilot project, is exhibited as a superimposition of the new design over the existing streetscape. The masterplan most notably communicates heightened traffic calming elements and the addition of rain gardens and storm-water swales on the street. The overall redesign of the new street has only slight compositional differences than that of the existing one, and shows limited attempt at addressing the public/private interface between dwelling and street.

While enhanced planting is indeed a design element that contributes to quality of place, one might question whether the term “living” is used to describe the abundance of street vegetation rather than the notion of human activity in the street space itself...? The narrowing and widening of the carriageway through the design of swales and rain gardens reflects somewhat subtle changes to the composition of the street and speaks more of the desire to achieve balance between ‘place’ and ‘corridor’ (people and car use) than a bold attempt to completely reclaim the street for people-oriented ‘living.’
landscape, culture + street has considered new thoughts on the role of landscape in the contemporary city and resultantly framed the streetscape as design generator within a residential context. The importance of street design is conveyed in the quest to reclaim the street space for people. "First and foremost, a great street should help make a community: should facilitate people acting and interacting to achieve in concert what they might not achieve alone"57 - according to Allan Jacobs in his book Great Streets.58 On that note, the following chapter reveals more depth on the specific elements and design principles which create ‘great streets’ and celebrate the ‘living’ quality of street space.


9 Ibid; p8


13 Ibid; p24


15 Ibid

notes

03 landscape, culture + street
16 Ibid; p37
18 Ibid
20 Ibid; p1
21 Ibid; p5
22 Ibid; p51
25 Ibid
26 Ibid; p10

notes

03 landscape, culture + street
36 *Ibid*; p15
37 *Ibid*

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**notes**

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notes

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50 Ibid
53 Ibid; p3
54 Ibid; p13
55 Ibid
56 Ibid; p3
58 Ibid
analysis looks into the physical designable characterises of streets and what makes them better than others. This chapter delves into Alan Jacobs’ book *Great Streets*¹ to reveal a range of criteria the author advocates as requirements for achieving ‘great streets’. In addition, this chapter takes a look at a contemporary report, titled *Manual for Streets (MfS)*² by the UK Department for Transport (DfT), which recognises the need to design residential streets with a focus on creating qualities of ‘place’ and should not be oriented around accommodating the motor vehicle. Jacobs’ analysis of the best streets offers a reference for undertaking the case study investigations into the urban streetscape scene of two New Zealand cities, which are to follow. Sampled streetscape scenes of Auckland and Christchurch cities are exhibited as visual essays and reflected upon in relation to the methods and criterion complied by Jacobs and the MfS.
Allan B. Jacobs in the opening to his book *Great Streets*,³ talks of his preference for driving down local streets to reach his home rather than taking the freeway. Although the trip is longer, there is more interest in the local streets, more to stimulate his eye. Not only are some streets better to drive along, some are better to be on. In particular, he talks of Roslyn Place in Pittsburgh. This cul-de-sac with no claim of specialness, consists of red brick houses and large trees, and in Jacobs’s view “is better to be on and certainly to live on than are countless suburban residential streets the world over.”⁴ Roslyn Place is considered a great street. Many other great streets are documented, described, analysed and judged by Jacobs as he strives to collate a source of knowledge and understanding “to help make future great streets - streets where people will want to be.”⁵

An exploration into the physical, designable characteristics of these great streets are made with the fundamental purpose of providing information for designers and the like to refer to. Information is presented in the form of plans and section drawings, all at the same scale to allow comparative analysis. In addition observational notes are documented enabling the nature of the street to be conveyed and although less objective, these notes are important in helping to build a sense of context.

Jacobs admits to the difficulty of diagnosing the physical qualities that constitute ‘great streets’ and he acknowledges that some will argue that the social and economic factors are the defining variables. However he asserts that physical design creates a great street due to the fact that streets still need to be laid out and designed before their physical existence. Following that concern is query towards the definition of a great street. Some people will want to decide themselves on what they consider to be the best streets. It has been the reliance on experienced judgement of design professionals in appointing the ‘great streets’ of Jacobs’ book. In addition to the opinions of professionals, long surveys of ordinary people who use streets were undertaken along with field research, literature reviews and the collection of much data. Still, Jacobs acknowledges that interpretations will differ and consequently judgement will remain.
Before alluding to the physical qualities that make a street stand out, Jacobs sets up a framework of the practical criteria for what great should do. The following of which has been extracted from his writings on “Criteria for Great Streets:”

“A great street should help make a community...”
Factors that contribute to interaction help build community. A street should be able to facilitate activities that bring people together.

“A great street is physically comfortable and safe...”
The pleasantness of a street is influenced by aspects of its microclimate such as shade, sun exposure, relief from winds etc. Safety is determined by both the physical make up and use of street materials, and by feelings of exposure, confinement and surveillance (eyes on the street).

“The best streets encourage participation...”
The ability of building occupants to add something to the street, usually of a temporal nature, which encourages people to stop and take part in a certain activity, or even just sit and watch as passive participants.

“The best streets are those that can be remembered...”
A street that leaves a long-lasting positive impression and a desire to be there.

More specifically, certain physical qualities are crucial for creating streets that shine above the rest. These designable qualities provide a reference source for urban designers and decision makers where the information can be used as guides, models or perhaps as generators for new designs. Even as examples of what not to do. The following physical qualities are illustrated in “Part Four: Making Great Streets, Chapter One: Requirements for Great Streets:”
“Places for People to Walk with Some Leisure”
It is on foot that you see, meet and experience other people. Not while driving in a private car. Public interaction and socialising are induced by leisurely walking. The balance between pedestrian and vehicle space greatly influences the desirability for leisurely walking as opposed to walking by necessity. As does safety and the degree of physical separation between pedestrians and vehicles.

“Physical Comfort”
Climate-related characteristics such as warmth, sunlight and protection from the elements need to be understood as measures of comfort within a street and designed for accordingly.

“Definition”
Boundaries which define the edges of a street can be achieved both vertically and horizontally. Proportion and spacing of buildings and other space defining elements can determine whether a street occupier feels pleasantly enclosed or nervously exposed. The work of H. Maertens and Hans Blumenfeld examine the height to distance ratio appropriate to the nature of street experience. They discuss human scale in relation to building height and street width, “concluding that a building height of three stories (approximately 30 feet) and width of 36 feet, with a street width of 72 feet, are the maximum dimensions of a building of human scale.” In addition, a general formula for achieving street definition is attested; “Generally, buildings are likely to provide a sense of definition when height-to-horizontal-distance ratios are 1:4 when the viewer is looking at a 30-degree angle to the street direction.”

“Qualities that Engage the Eyes”
Streets that prompt eye movement can do so through changes in surface material, separate buildings, windows and doors in which light moves over constantly, keeping the eye engaged. Visual complexity is aimed for but not to the extent that a
scene becomes chaotic. Trees possess movement in their branches and leaves and in the light patterns that filter through them.

"Transparency"
Streets with a degree of transparency in their edges between the realms of public and private create a sense of curiosity. Windows and doors evoke interest as to the functions behind a street wall and in terms of community they leave a resident with the comfort and security of knowing that their neighbours are keeping a watchful eye.

"Complementarity"
Buildings which resonate with each other provide a sense of order and regularity to a street. Diversity is still promoted by those streets whose buildings respect their neighbours in terms of height, materials, colours, entrances or overhangs are streets that exhibit complementarity.

"Maintenance"
A matter of keeping the physical attributes of a street clean, clear and in good repair. The use of good quality materials complements this issue by prolonging the regularity of which maintenance is actually needed and by withstanding greater exposure to the elements.

"Quality of Construction and Design"
The appropriate uses of materials and the care of workmanship in laying these materials are issues which contribute to the quality of a street. Understanding design details of buildings as well as in the public realm enable a strong basis for design quality which is reflected in making of the best streets.
Most importantly great streets move beyond functional purposes - beyond facilitating vehicle movement and allowing access to property - to become spaces for living. Great streets serve the community by bringing people together, encouraging socialisation and interaction. Above their practical roles in urban life, great streets are places for being.

Some aspects of Jacobs’ criteria are more definable than others. Many are subjective and will depend on the individual street occupier or observer. Questions regarding the level of objectivity may arise when deciphering the criteria and this is encouraged. For the underlying principle behind composing a set of criteria is to ignite questioning, as questioning which leads to analysis and that is exactly what Jacobs’ has done in his search for the best streets in the world. “The query, however, is worthwhile.”

The following pages are extractions from Part Two of Jacobs' book, titled A Compendium of Streets [Figs. 4.00-4.03]. They are examples of Jacobs’ methods put to work and exhibit how the observational notes convey the nature of the street. From these notes it becomes apparent as to how his Requirements for Great Streets were derived. It is to be noted that a wide range of streets were surveyed in Part Two, however a selection of the four examples included here were made due to their residential character. The additional annotations (red text) imposed over Jacob's notes are my own analysis of his method, highlighting key notes which link to his 'requirements for great streets.'
“copyrighted image”
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“copyrighted image”
The notion of great streets as places for being celebrates the publicness of street space, for within a residential context it is where community life exists. Jacobs relays in his conclusion of *Great Streets* that design matters; that the hands of the street designer are visible “in a place where you might wish to live.”

The quest for the street to achieve attributes of place is far from a new design phenomenon. This is an area of importance long identified among international authorities and built environment professionals. A notable example of the research undertaken and design implementation trialled is with the UK Department for Transport (DfT). The DfT produced a report in 2007, “Manual for Streets” (MfS), which recognises the need to design residential streets with “a focus on creating locally distinct, high-quality places” and puts forth a framework from which to achieve this. The Manual has been created to assist practitioners in making informed and appropriate decisions towards street design. This document provides a range of criteria necessary for the delivery of multi-functional residential streets, carrying underlying values which are geared towards pursuit of the Government’s placemaking agenda of enhancing “individually distinctive localities.”

The meaning of *place* within the context of the Manual has additional considerations from Jacobs’ romantic notion of place in *Great Streets*, for in the 14 year publishing gap between both writings; the global issue of sustainability has escalated. For designers of the built environment, the contemporary notion of creating new places is generated by the desire to obtain principles of sustainability. The Compact City theory, as previously discussed, proposes the method of intensification as a response to ensuring that new development and urban infill is executed in a sustainable manner. The benefits of intensification are a more vibrant and varied way of public life, of community life. The alternative is the homogeneous components of sprawl; repetitive subdivisions connected by barren collector roads, where the “citizen finds few public spaces worth visiting.” In this light, the contemporary meaning of *place* (from the professional realm of the designer and planner) is founded upon its acquisition of sustainable attributes. The MfS framework is derived upon this model of...
intensification in that it promotes walkability and discourages use of the car. The UK Department for Transport promotes the MfS as a product of its “work to promote initiatives that can reduce congestion, improve local environments and encourage healthier and safer lifestyles. Many of these initiatives are part of the broader cross government agenda for Creating Safer Greener Communities.”

As a result, attributes from the document which claim to constitute a sense of place are largely geared towards sustainably-minded urban design principles. Most notable are sustainable responses to transportation issues, such as the need to reduce carbon emissions through the reduction of motor vehicle usage and by encouraging more environmentally friendly modes of transport such as walking and cycling. This is exhibited in the MfS preface which asserts that the movement function of residential streets has been the focus for too long, acknowledging that the dominance of the motor vehicle on residential streets is to the extent that the quality of life is diminishing. It is suggested that the design of residential streets needs to be considerably less oriented around accommodating the motor vehicle and instead, emphasis should be allocated to the needs of pedestrians and cyclists. Street design should accommodate all members of the community and create a place that people want to spend time in rather than the current design approach of creating generous carriageways that predominately serves the motor vehicle; “MfS refocuses on the place function of residential streets, giving clear guidance on how to achieve well-designed streets and spaces that serve the community in a range of ways.”

Resembling Jacobs’ list of physical requirements for great streets, Chapter 5 of the MfS sets out the criteria for how street design can create quality places. Similarly, these designable qualities provide a reference source for urban designers and decision makers where the information is intended to be used as guide. The following criteria, extracted from Chapter 5 of the MfS, aims to promote the place function of streets;
"Street dimensions: Width"
Width between buildings and the scale of building needs to be considered in terms of aesthetics and the potential for activities to take place within the streetscape.

"Street dimensions: Height"
It is recommended that the height of buildings is in proportion to the width of the street in order to convey a sense of enclosure. Taller buildings have disadvantages such as overshadowing public space and attaining a domineering relationship with the street.

"Street dimensions: Length"
Street length can affect the quality of a place by framing views and adding to the sense of identity or by providing long straights which may encourage high traffic speeds.

"Buildings at junctions"
The arrangement of building and footpaths at junctions greatly influence the definition of the space. It is proposed that “a wide carriageway with tight, enclosed corners makes a better junction than cutback corners with a sweeping curve.”

"Backs and fronts"
Back gardens should adjoin other back gardens to ensure crime prevention, as should front doors be seen to open onto front gardens or towards the streets. If streets are defined by back-yard fences a sense of place is lost and once again, high traffic speeds are encouraged.
“Designing streets as social places”
The public realm of streets should accommodate a range of users and encourage social interaction. Play spaces, resting places, shelter and mitigation against microclimate effects all contribute to the creation of a desirable place to be. Visual interest and amenity also aid in enacting the place function of streets.

“Other layout considerations”
This relates to the layout of new housing or mixed-use areas. Factors include the impact of building orientation on the microclimate, energy efficiency, providing views or vistas, variety and visual interest, crime prevention, the relationship between private and public or communal space.

“Where streets meet buildings”
The nature of threshold spaces between public and private realms needs to be carefully managed, including the nature of front gardens. “Continuous building lines are preferred as they provide definition to, and enclosure of, the public realm.”

The setback of dwellings from the street is a key consideration in regards to determining privacy, establishing buffer zones and providing amenity space for planting.

“Reducing clutter”
Street furniture, bins, signs etc can clutter the streetscape and propose implications for users.

“Local distinctiveness”
Strengthening of local identity can be achieved by using local materials, mirroring the grain and pattern form of surrounding styles and relating layout to neighbouring developments.
“Planting”
Planting adds value and softens the hardscaping of an urban street scene. Planting creates visual interest due to contrasting colours and foliage textures. Shelter, privacy, buffers and spatial definition can also be achieved with vegetation.

“Standing the test of time”
Material and maintenance specifications need to be of a high standard in regards to durability and performance against environmental elements.

Building on these design principles for achieving quality places, the Manual contains more prescriptive requirements in terms of detailed design issues including: “Street users’ needs, Street geometry, Parking, Traffic signs and markings, Street furniture and street lighting, Materials, adoption and maintenance.”

manual for streets
04 analysis
Great Streets and Manual for Streets have provided a foundation from which a system of inquiry into the urban streetscape scene of two New Zealand cities is built upon. Various streetscapes of Auckland and Christchurch cities are exhibited as visual essays and reflected upon in relation to the methods and criterion complied by Jacobs and the MfS.

I now move to the particular study site settings, and as Allan Jacobs notes, "a case study is an empirical inquiry that investigates contemporary phenomenon within its real-life context." Jane Jacobs in her book, The Death and Life of Great American Cities, documents her insights into the vitality of city life in which she gained from the direct experience of living in New York City. Jacobs’ study is a renowned example of how the case study strategy is an effective research tool. In this thesis the nature of residential streetscapes is the subject of inquiry, with Christchurch City as the primary case setting and Auckland City providing a secondary site for investigation. The role of a case study is to be exploratory in purpose. Design as research is a major component of this thesis and will be used as a tool for testing propositions about the design of streetscapes in the event of (re)development. These propositions are anticipated to arise as a result of inquiry into the current nature of streets in their real-life context.

Selection of the field sites involved two different methods, one used for each city. The selection process for Christchurch involved the use of transects lines cutting horizontally through its urban form. Four imaginary lines are drawn through the city on a North-West, North-East, South-West and South-East axis and pass through Christchurch Cathedral square in the central city. The shape of Christchurch’s urban fabric enabled each transect line to pass through a succession of the residential zoning areas entitled Living 1 Zone through to Living 4 (A,B+C) Zone. This reflected the range of residential densities present in Christchurch. A sample of streets from all four living zones were made by selecting those which intersected the path of a transect line [Fig. 4.04].

visual essay
04 analysis
Due to the topography and urban form of Auckland however, the use of transect lines wasn’t able to be replicated in the same fashion as for Christchurch. Therefore a sampling method was used involving the collection of streets from within eleven residential-zoned areas of Manakau City, Auckland City, Waitakere City and Papakura District (all former division of the current Super City). The zoning areas for each city pre-determined the locations from which each sample would be taken and streets were selected at random.

As outlined in the thesis introduction under structure + methods, this strategy is categorised under inductive research which is representative of a ‘subjective’ approach; the subjectivist position is associated with the fine arts, humanities and social disciplines in which the researcher is interactive with the subject of inquiry, and ‘sampling’ is more concerned with the selection of particular examples and cases than with the representation of general populations.”

The site explorations adopt some inquiry methods used by Jacobs in his book Great Streets, specifically in Part Two; A Compendium of Streets. These consist of cross-sectional drawings and plans accompanied by field notes [refer to Figs. 4.00-4.03]. Explorations of the Auckland and Christchurch sites are displayed as visual essays (composed of photo panoramas and overlain cross-sections) combined with field notes documenting the nature and characteristics of each street. For comparative purposes, the cross sectional overlays are at a consistent scale and dimensions have been included. Due to the major source of information being in the form of written observations; it could be argued that a degree of objectivity is inevitably lost. However observation is important in conveying a street’s context and atmosphere, so to reiterate Jacobs’ words; “arbitrariness is everywhere in endeavors such as these...judgment remains.”

With regard to Groat & Wang’s book Architectural Research Methods, this system of inquiry can be termed qualitative. Qualitative research takes on a subjective reality and “a view of the researcher as interactive with the subject of inquiry.” In terms of methodology, the qualitative paradigm prescribes “an inductive process of inquiry that seeks clarification of multiple critical factors affecting

visual essay
04 analysis
the phenomenon.”

In conclusion to the field explorations of the two cities is a discussion of the findings. The analytical notes and images are relayed in response to the design qualities listed in the MfS to promote the place function of streets. Discussion is also made in response to the criteria and requirements put forth in Jacobs’ book for what constitutes great streets. Within the book a range of city streets are evaluated against the criteria and of course within cities are different kinds of streets. The explored streets of Auckland and Christchurch however, are primarily residential. Regardless of the assigned function of a street, a major objective of the work in Jacobs’ book is the provision of knowledge. “It remains to be seen whether or not the physical characteristics that make a great residential street are significantly different from those of a shopping street.”

With knowledge comes a basis for the future designs of great streets, and this production of knowledge is the intention of the field work.
Auckland’s resident population in 2010 was 1,354,900. Auckland shares 33.4% of the national population. In world terms, Auckland is a medium sized metropolitan region. Its growth rate is at 1.6% per annum. Half of New Zealand’s population growth between 2001 and 2006 was in Auckland. It is New Zealand’s main international gateway. The city welcomes over 70% of all international arrivals to New Zealand. Auckland is New Zealand’s largest commercial centre and wealth creator. The city contributes to 35% of the nation’s GDP annually. It is home to over 60% of New Zealand’s top 200 companies. Auckland is the logistics hub for 32% of New Zealand’s exports and 61% of its imports. Growth in population will mean a growth in demand for more development. Approximately 330,000 additional dwellings will be required by 2040. Single person households and couple-only households will increase significantly – to 60% of total households. An eco city approach for Auckland will see its distinctive volcanic cones and lava fields, coastal, marine and bush areas are protected for enjoyment and a sustainable future.
In recognition of the facts outlines on the opposite page, and as previously stated in Chapter 01, Auckland City is chosen as a secondary case study due to its national status. The Royal Commission on Auckland Governance and the Government recognised Auckland as having the potential to generate significantly improved social, economic and environmental outcomes in Auckland, and for the country as a whole. As the economic powerhouse of the nation, Auckland faces unique challenges to affirm its status as the city of influence in the south west Pacific and to lift its performance in contributing to New Zealand’s wealth creation. As a result the city is experiencing a greater sense of urgency than Christchurch and New Zealand’s other major cities, in regards to accommodating for an increasing population in a sustainable manner. New consolidation development will therefore happen at a more accelerated rate. An overview of Auckland’s current residential fabric will reveal the potential (or lack thereof) for the visions created in this thesis to be applied in an Auckland context.

Prior to the creation of the new Auckland ‘Super City’ Council in November 2010, Auckland was governed by separate city and district councils comprising the following: Auckland, Manukau, North Shore, and Waitakere Cities and Franklin, Papakura and Rodney Districts where growth was managed in a collaborative effort to limit urban sprawl. By 2050 the Auckland region could contain two million people and so The Auckland Regional Growth Strategy: 2050 was developed to provide a framework for managing that growth in such a way that enhances sustainability as the core element of the strategy. Its ‘Growth Concept’ illustrates the strategy's sustainable vision and is based on compact urban environments, where greater emphasis is placed on urban intensification that urban expansion. This vision is echoed through the region's several councils, as can be seen in Auckland City Council's District Plan which incorporates the concept of consolidation as an urban growth objective;“growth will be managed by promoting quality, compact urban environments (intensification)… most growth will be within the existing metropolitan urban area” While Manukau City’s District Plan 2002 identifies that development and management of the City form shall be in such a way that will respect the sustainable environment. "A sustainable compact urban form contained within defined metropolitan limits.” is a one such goal stated in the Plan for

residential fabric: auckland, new zealand
achieving the Council’s vision for the City.

Since the amalgamated Auckland Council a discussion document has been released offering ideas and initial proposals that will contribute towards creating the draft Auckland Plan, intended to be adopted by the end of 2011, as a first plan for a new Auckland future. *Auckland Unleashed: The Auckland Plan Discussion Document* focused on key objectives for spatial planning including quality of life, approaches to land use and responsible management of the built and natural environments. A strong vision expressed by the Mayor and Councillors is for Auckland to become a model “eco city” for the rest of the world. In regards to that vision, the discussion document highlights choices Aucklanders will have to make to ensure the City accommodates growth in an affordable manner. The existing option for a quality compact city where growth is confined within a metropolitan urban limit is highlighted as a strategy for sustainable growth management. Opposition to the use of a metropolitan urban limit (MUL) by some critics is acknowledged but the document goes on to emphasis the support for the MUL in its additional service to protection of the wider environmental values. The Mayor and Councillors acknowledge the challenge they have to deliver on the vision of a quality compact city and they ask for feedback on the proposals of intensive development, “no-go” urban areas and support for a compact city model.40

Street sampling from Auckland’s urban environment is presented as a visual essay to conveying the city’s residential streetscapes within their context. *Auckland Unleashed* promotes streets as the most important public spaces. In the discussion towards a quality built environment, investment in the amenity of streets is said to be crucial to the success of communities. “They need to be of extraordinary quality and be memorable.”41 The following visual essay depicts streetscape scenes from sampling the existing residential fabric of Auckland’s living zones. Photo panoramas combined with field notes work to convey the nature of each street, perhaps even unlocking something uniquely memorable. Nonetheless, for the reader, interpretations will differ and judgement as to whether these existing streets speak of extraordinary quality will remain.

residential fabric: auckland, new zealand

04 analysis

4.05 Central Auckland City | located in the isthmus with greater peripheral areas to the north and south
auckland city

Ryle Street

Bluegrey Avenue

Tippett Street
Residential 1 (Built) Zone: "To ensure the survival of the historic form and pattern of subdivision, buildings and streetscape in Auckland's early-established residential neighbourhoods. The Residential 1 zone's environment is an essential element of Auckland's heritage, which has been described as 'the most extensive range of timbered housing with its classical details and mouldings in the world'. In this zone the houses are largely Victorian-Edwardian but some modification has occurred with later infill such as the very plain 'transitional'-style bungalow of the 1910's. The houses generally stand close to the street and each other on narrow small sites."  

Residential 8b Zone (Strategic Growth Management Areas): "To provide opportunities for a more compact lifestyle, in appropriate locations, while catering for future population growth within the Auckland Isthmus...promoting the development of higher density apartment, terraced housing and townhouse residential development within specified growth areas."  

Residential 8b Zone: "The Residential 8b zone, is usually applied to parcels of residential land that are within a five minute or less walking distance of the town centre or major transport node. Multi unit development in this zone can reach 3-4 storeys high consistent with existing town centre commercial buildings."
Residential 1 (Built) Zone

- Narrow carriageway – traffic is forced to slow down. This is aided by on-street parked cars and so right-of-way becomes pedestrian oriented.
- Strong definition, street feels enclosed due to street width and small distances between dwellings.
- Right side of street – fairly narrow threshold spaces, predominantly in the form of front porches and small gardens, offering a buffer zone between public space and private dwellings while still maintaining a sense of overall street enclosure. Encourages social interaction.
- Left side of street – not so pleasant due to tall physical barriers in place of open threshold spaces.
- Lack of street planting and no berm between carriageway and footpath.
- Asphalt ground, no variety in surface treatment.
- Variety of housing typologies: single family dwellings on small plots and terraced housing. These typologies indicate a higher sense of density and compactness.
• Streetscape is of a grandeur scale, reminiscent of a boulevard due to the separation of the carriageway by a planted swale median.
• Buildings resonate to provide a sense of order and regularity, forming a continuous facade. However a sense of enclosure is lost due to the large street width (approximately 26m).
• Movement is linear and predominantly accommodates for moving traffic – limited potential for other activities to take place on the street. No shelter, resting places or areas for play.
• The level of transparency between public and private realms is low due to front gardens being raised above street level and hedges disrupting visual connections from the street.
• Not an inviting place for leisurely walking, the street feels more like a thoroughfare road rather than a pedestrian friendly space.
Residential 8 Zone (Strategic Growth Management Areas)

Residential 8b Zone

- Although the housing typologies are of a medium to high density nature, the amount of space surrounding the building on the left hints at a more suburban context rather than an inner city infill site.
- The setback distance of this apartment building from the street results in a sense of isolation and enclosure of the public realm is lost.
- Strong physical barrier between the townhouses on the right and the street space. The provision of front gardens would have made an attractive threshold space, however this opportunity has been lost by the high concrete fencing. Interaction between neighbours is therefore discouraged and a sense of community diminished.
- Street is segregated – parking is allocated to certain areas and footpaths are raised.
Main Residential Zone

“The main residential zone allows consolidation and intensification of residential development while ensuring the maintenance and enhancement of residential amenity values by way of development and performance standards.”

Flatbush Residential 1 Zone

“To facilitate the development of an integrated, medium/ higher density residential environment (while enabling higher density) which has high levels of amenity, supports a range of travel modes, allows for a range of living opportunities and incorporates opportunities for compatible small scale employment in appropriate locations.”

Triumph Road: Local Centre Precinct: “The Local Centre Precinct has a residential emphasis and is generally located within 400 metres or a five minute walk of the neighbourhood centres. The intensity of residential development is intended to achieve at least the same levels envisaged for the General Precinct (at least 16.5 households per hectare) but provides an opportunity to achieve similar density levels to the Central Precinct (25 households per hectare). This Precinct is intended to cater for a range of housing types including apartments through to larger family sized terrace houses or stand alone houses.”

Residential (Built Form) Heritage 1 Zone

“Where a particular dwelling type and style and built form predominates and has heritage significance. Three Residential (Built Form) Heritage (RH) zones have been applied to three local residential streets. They are:

RH1 Rosella Road, Mangere: This zone will protect the group of Californian Bungalows, Transitional Bungalow Cottages, English Cottage, and English Cottage Revival (built around the 1920s and 1930s) that prevail in this street together with the original pattern in the built form. This includes protecting building spacing and orientation, setback, scale, height, roof forms and the extent of site coverage.”
Residential (Flora) Heritage 4 Zone

"Where the vegetation or the natural features of a residential area predominate. There is one such zone:

**RH 4 Pohutukawa Ave/Mangemangeroa Creek escarpment, Howick:** This area has a unique cultural landscape typified by scenic native bush. Pohutukawa Avenue in particular, has “soft” edges of bush and bank and vegetation forming a tunnel over the road. This zone will ensure that development does not intrude a hard urban presence upon the scenic bush qualities of the area and the natural features of the escarpment.” Intensity Conditions: “Household units not exceeding a density of one per 750m² net site area.”

Residential (Traditional Suburban) Heritage 7 Zone

**RH7 Eastern Howick:** “where the heritage is primarily defined by the overall pattern of traditional suburban development including single house on single large lot, streetform, front setback, layout, status of the garden and natural heritage (eg landform). The residential (traditional suburban) zones will help to ensure that the housing density and layout respects the traditional suburban qualities, including the importance of open space and gardens in these areas.”

Integrated Intensive Housing Zone

“This is a special policy zone specifically for medium or high intensity residential development, where an overall average household density of 1:400m² net site area is required. The requirement for housing to achieve a specified average density is deemed justified in this location in order to encourage more efficient use of land and different housing and neighbourhood types.”

manukau city zone descriptions

04 analysis
Main Residential Zone

- Single family dwellings on individual plots of land indicate a street of suburban nature.
- Height of dwellings (single-storey in particular) teamed with setback distances from the street diminishes a sense of enclosure.
- Similar materials and colouring on dwellings is an attempt at complementarity.
- Rather large grassed berms separating pedestrians from vehicles.
- Size of homes suggests a wealthy area.
There is a degree of transparency between the edge of the public realm and the private front yards of the dwellings. Although the presence of high fencing strongly indicates boundaries between public and private.

- Plenty of windows and doors facing the street – good surveillance
- Height is relatively in proportion to width of the street, conveying a sense of enclosure
- No areas for rest, linear movement is prescribed and enforced by cars.
- Reasonably high level of density communicated by housing typologies
- Strong edge definition on both sides of street – continuous building facade. However little variation in style and appearance between individual dwelling units results in a mass-volume effect with little visual appeal.
Residential (Built Form) Heritage 1 Zone

RH1 Rosella Road, Mangere:

• Sense of enclosure severely lacking – no edge definition usually created by building, some dwellings are largely set back from the public realm of the street and positioned in the centre of large plots surrounded by space.
• No eye engaging qualities or visual interest to street,
• Sporadic planting – vegetation doesn't work in creating a sense of enclosure to the street or aiding in a unifying the street.
• Large grass berms, large carriageway.
• No public/private interface due to large spatial separation between the realms.
Residential (Flora) Heritage 4 Zone
RH 4 Pohutukawa Ave/Mangemangeroa Creek escarpment, Howick

- Narrow carriageway.
- Large houses with large setbacks results in dwellings being divorced from the street.
- Garage facing the street on the right, in conjunction with an offensive timber fence completely shuts down any interaction between public and private realms.
- This street largely portrays a thoroughfare to traffic with no invitation to linger or occupy the space except when passing through.
Dwelling setbacks aren't so drastic in this suburban location, aiding in creating some sort of dialogue between house and street. Although the large width of the carriageway separates opposite dwellings.

- New/contemporary infill on the right adds interest to the streetscape.
- Planting of street trees would have helped reduced the sense of exposure which accompanies the wide carriageway width.
• The regularity and consistent orientation of dwellings on the right of street creates a continuous building facade therefore strong edge to the street. This is not mimicked on the left side.
• Rather large spatial buffer between dwellings on the right and the carriageway. This is not a social space – garages face the street and invite cars to fill up this area by parking on the driveways. The dominance of cars and driveways discourages social interaction and in fact separates the dwellings from the street.
• Short length of the street creates a sense of place and nicely frames views to the distant reserve.
• Street trees of medium height (*Prunus spp.*) add character and help the street feel more enclosed and protected without dominating. The street elements and composition are of a lovely human scale.
Urban Residential 8 Zone

“Density objectives include of this zone include: "(i)To achieve forms of medium density residential development which are supportive of pedestrian, cycle and public transport and which take advantage of the zone’s proximity to public transport routes, the proposed mixed use node and Bruce Pulman Park, (ii)To ensure that the establishment of medium density residential development (referred to in i. above) is not precluded by the establishment of low intensity residential uses."

Note: The Plan defines Medium Density Housing Development as: 'A residential development comprising four or more household units on a site with a minimum area of 1400m2 and at a density of greater than one dwelling per 350m2 of net site area.'
Narrow carriageway widens to allow for on-street parking. The benefits of narrowing carriageways to pull buildings closer and creating a sense of enclosure is lost in this sense.

An element of exposure is created by the communal green space to the left.

This area however adds another dimension to the streetscape – offering recreational amenity, a space for play and rest.

The line of street trees between carriageway and the recreational space will help enclose the street space when they mature, especially in summer when foliage is present.

Little variation between housing styles and materials - this evokes a sense of mass-produced housing, potentially less attractive as there is a lack in diversity and individuality.
Dwellings on the left turn their side to the street - no front doors or entrance ways connect to the street.
The interface between the dwellings on the right and the street is obstructed by parked vehicles outside garage doors - placement of garages can be blamed for this.
Consistency in the height of dwellings provides a comfortable sense of enclosure and frames the street nicely.
Lack of juxtaposition in the form of dwellings on the left evokes little interest.
Short length of the street provides a human scale for users of the street.
Living Zone  “The Living Environment covers most of the urban and suburban residential areas of the City. Dwellings must have a minimum net unit area of 350m².”54

Special Area Zone:  “These are specific locations within the City that have characteristics separating them from the Human Environments.”55

*Harbour View North*
Reasonably narrow carriageway - encouraging slow moving traffic
- Spacing between dwellings and consistency of building height aids in giving the street a sense of enclosure.
- Unity of housing style and appearance provides a somewhat continuous edge treatment. However the lack of building individuality diminishes visual interest.
- Front rooms of dwellings face the street and create a sense of curiosity from occupiers on both sides, while also providing street surveillance.
- Small front yards merge well with street, due to lack of fencing, and encourage social interaction. This also provides opportunities to enhance the biodiversity in the street through continuous planting in private and public realms.
Street feels slightly exposed due to housing only on one side.
- Lack of fencing between dwellings invites a level of interaction between neighbours and passer-bys.
- Overall community feeling, aided by the recreational open space on left side of street which encourages activity and heightened use of the street space.
- Garages fronting the street invite cars to park on the driveways which in turn causes a barrier between public and private realms.
As with Auckland, street sampling from Christchurch’s urban environment is presented as a visual essay to convey the city’s residential streetscapes in their current context. The overall street network of Christchurch takes on a four tier hierarchy, dividing busy with less busy arterials and quiet with less quiet residential streets. This status of tiers is defined in engineering terms involving such aspects as traffic volumes, speeds and road cross typologies. Proposal of a Living Streets Charter was presented to Christchurch City Council in 1999 which advocates a new policy environment where all streets are for living. The Charter’s mission is to creating living streets where a variety of roads encourage more street activity and community. A ‘Tools Manual’ produced in conjunction offers technical solutions to the concept. A Living Streets Road Hierarchy system is proposed to replace the current four tier system, assigning more emphasis to their living functions, “It is an affirmative action to provide a better balance between the living/access and movement functions of the road system.”

‘Quality of life’ is another phrase referred to in the manual in regards to best practice design for local streets.

The Council accepted the Charter in 2000 as “the guiding policy framework for new street asset and street asset renewal planning, design and implementation.” The following visual essay depicts streetscape scenes from sampling the existing residential fabric of Christchurch’s living zones. Photo panoramas combined with field notes work to convey the character of each street in its current context. Judgement remains as to whether or not the streets surveyed reflect the concept of “Living Streets.”
Living 4A (Central City - Diverse) Zone

“Although characterised by a diverse range of activities the zone provides principally for medium-high density residential accommodation. It is anticipated that the zone provisions will maintain a dominance of residential buildings at medium-high densities and heights (1-5 storeys), lightly framed by open space and planting. The density/height equation acknowledges the existing intensity of development over much of the area and its remaining potential for residential infill, redevelopment and enhancement.”

Living 4B (Central City and North Beach – High Rise) Zone

“The zone anticipates high densities of residential development to heights not greater than about 10 storeys for the central city. The density/height equation acknowledges both the strategic location of the Living 4B Zone adjacent to large areas of open space and the appropriateness of providing for this type of living environment in the central city area.”

Living 4C (Central City and central New Brighton - Character) Zone

“The Living 4C Zone is characterised by a variety of residential environments of special residential character, amenity and coherence. These range from the large scale character homes and mature planting in the central city west to the medium to small lot sizes and small cottage styles in the Avon Loop, Moa and Victoria areas. Although a medium-high density is prescribed throughout the zone, various heights recognise that a contextual approach to the scale of development is necessary to preserve the special characteristics of each area.”

Living 3 (Medium Density) Zone

“It provides principally for medium-density residential accommodation. It is anticipated that the zone provisions will encourage diverse residential development, redevelopment and infill to medium densities and moderate heights, compatible with the character of existing development in the area while maintaining a reasonable degree of open space.”

christchurch city zone descriptions
04 analysis
<table>
<thead>
<tr>
<th>Zone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Living 2 (Inner Suburban) Zone</strong></td>
<td>“The Living 2 Zone generally covers the inner suburban living environments of the city, located between the Living 1 and the Living 3 Zones. It provides principally for low-medium density permanent residential accommodation. It is anticipated that the zone provisions will maintain open space and landscape plantings as an important feature of the environment with dwellings at low-medium building densities. In most areas there will be potential for infill and redevelopment at higher densities than the Living 1 Zone.”(^{64})</td>
</tr>
<tr>
<td><strong>Living 1 (Outer Suburban) Zone</strong></td>
<td>“The Living 1 Zone covers most suburban living environments of the city, excluding the hills, and provides principally for low density permanent living accommodation. It is anticipated that the zone provisions will maintain open space and landscape plantings as an essential feature of the environment with dwellings at low building densities and heights.”(^{65})</td>
</tr>
<tr>
<td><strong>Living 1A (Outer Suburban Boundary) Zone</strong></td>
<td>“This zoning applies to a number of areas of existing or proposed new residential developments on the interface between the urban and rural areas. These zones differ from the Living 1 Zone because of their location on the urban edge, where a range of constraints may apply, including airport noise, soil qualities, a need to ensure co-ordinated development of separately owned land, a need for buffer zones or identification of required open space or roading linkages.”(^{66})</td>
</tr>
<tr>
<td><strong>Living H (Hills) Zone</strong></td>
<td>“The Living Hills Zone covers all the living environments of the city which are located on the slopes of the Port Hills, extending from Westmorland in the west to Scarborough in the east. It provides principally for low density permanent residential accommodation. It is anticipated that the zone provisions will maintain open space and landscape plantings as an essential feature of the environment with dwellings at low building densities.”(^{67})</td>
</tr>
</tbody>
</table>
north-west transect

Chester Street West

Hudson Street

Cox Street

Winchester Street

L 1

L 2

L 3

L 4C
Diversity in housing form and style adds visual interest.
Similar building heights evoke a sense of enclosure; this is slightly diminished however by the vacant/parking lot halfway down the street.
Front yards are obscured from street view by high, solid walls. Minimal degree of transparency between the realms of public and private.
Varying materials on dwellings also creates interest.
Deciduous street trees are young but will provide a softened edge to buildings when matured.
Street planting seems to merge with vegetation within private boundaries.
Narrowed carriageway at centre of street breaks up the length and provides space for a range of activities.
Provision of seating benches aids in creating a sense of ‘place’ – the street space is conveyed as a space to stop rest and observe rather than merely pass through.
Row houses/town houses indicate higher density.
Low, permeable fencing in front of dwellings on the left aids in capturing curiosity from street users and encourages interaction between neighbours.
The street accommodates and encourages leisurely walking.
The height and spacing of dwellings creates a strong edge.
Variation in housing typologies – single family dwellings/town houses/apartments.
Weak edge definition due to varying setbacks and spacing between dwellings.
Building height and orientation also differs resulting in a lack of diminished sense of enclosure.
Contemporary architectural infill provides visual interest.
Road markings suggest an inner-city location.
Sense of community is lost due to the dominance of high fencing on property boundaries - little opportunity for social interaction between residents and street occupants.
Living 2 Zone

- Small street width – height of buildings is not far off that of street width, achieving a sense of enclosure as a result.
- No berm. Footpath is separated from carriageway through elevation.
- Yellow road-marking hints at an inner-city location rather than a suburban context.
- Strong boundary between public and private realms – limited transparency in edges, failing to evoke a sense of curiosity.
- The street is of a lovely human scale due to its narrow carriageway and compactness of dwellings. A sense of community however has been lost due to the predominance of high, impermeable walls segregating the public and private realms of the street.
Living 1 Zone

- Where are the dwellings? Planting on the boundary line between street and private sections offers a physical buffer between houses and the carriageway – epitomising the ‘Garden City’ image of Christchurch perhaps?
- The dwellings provide no definition to the street but the presence of large, relatively high vegetation aids in reducing feelings of exposure.
- Colours and foliage textures of the vegetation create an element of visual interest.
Living 4A Zone

Extremely wide carriageway allowing for row parking. While the street location is central city, the extremely wide carriageway and generous spacing between buildings would suggest otherwise. These elements are characteristic of a suburban nature.

Varying housing typologies – town houses/apartments/single-family dwellings.
Minimal sense of enclosure or edge definition.
Living 3 Zone

- Excessive carriageway width, far too big for medium density development – even wider than some found in low-density zones.
- Extremely large spatial buffer between dwelling on the right and the street, while the dwellings on the left opt for high physical barriers between the public and private realms – both measures are far from creating a sense of community.
- Slightly meandering road helps to frame views to the port hills in the distance and aids in slowing traffic, making it more inviting for street users and pedestrians.
- Height of dwellings to width of street space results in a sense of exposure.
- Large dwellings setback of from the street.
Aside from the provision of street trees, planting is sparse particularly in the front yards of dwellings.

Large setbacks and spacing between dwellings on the right create a sense of exposure while high fencing on the left strongly separates public and private realms.

Dreary materials tones. Could be mitigated through both on-street vegetation and planting in private front yards.
- Lack of boundary fencing promotes social interaction and creates a sense of community. Also heightening the visibility of vegetation within private sections.
- Variation in housing style adds visual interest.
- Although carriageway width is quite large, houses have only small setback distances and so a sense of enclosure and definition is created. This is aided by the presence of a footpath on one side only.
- Houses on the right don’t appear to have as much dialogue with the street as the houses on the left due to interior orientation – the footpath on the left increases the chances of social encounters with houses placed on that side.
- A rise in the gradient of private sections also helps to define the street space and stands for a subtle public to private transition.
Large setback and berm distances and varying building heights leave the street space feeling exposed, however the presence of street trees help to provide a sense of definition.

Although this street is with a medium-density zone, the dominance of single-family dwellings on decent sized plots would suggest a more low-density, suburban setting. A sense of density is non-existent.

Infill houses on the right have little dialogue with the street as it appears the interior living spaces face the back yard.

There's a strong occupation of impermeable fencing structures further segregates dwellings from the streets.
• High fencing, very segregated – strong boundary between public and private realms.
• Consistency in building height and similarities in style of those dwellings on the right provide a visually pleasing street edge. Interest could have been heightened had the fencing been lowered/made permeable or disposed of altogether.
• This continuous edge element is lost on the left side due to varying dwelling heights and spacing.
- Garage on property boundary on the right is a hindrance to social interaction.
- Lack of boundary fencing on the left maintains a level of connection with the street but this is weakened by the setback distance.
- Living rooms of the dwelling on the left face the street and provide a level of security for neighbours and street users.
- Lack of street trees and planting leaves the scene dominated by hardscaping.
Street trees on either side help to frame the street and work to soften the hardscaping of the buildings.
Dwellings are visually obscured but boundary fencing remains largely visible – all diminishing any sense of ‘place’ and community.
The street lacks a sense of residential compaction that is present in other Living 3 streets.
A dominance of high, impermeable fencing along property boundaries.
Traffic calming measures – narrowing of street at certain intervals encourages leisurely walking.
Streets trees are placed sporadically, losing a sense of definition. The presence of mass planting in areas where carriageway narrow helps to soften the street edge and could have enhanced the street amenity more if these nodes had been more frequent.
Nearly every property is defined by fencing – some higher than others but nonetheless reducing social encounters all the same.
Very wide berm to the right segregates the dwellings from the street even further.
Power poles on both sides are the dominant vertical element and aid slightly in providing some sense of enclosure to the street.
Temporary objects (wheelie bins) speak of the everyday living patterns of the street’s residents – adding to the character of suburbia; largely desolate streets with only hints of human life.

Width of street teamed with low-rise dwellings gives little sense of enclosure.

Small windows in the dwelling on the left indicate the house has turned its back on the street. Presumably the smaller windows signal bedrooms and so the living areas must face the backyard.

Dwelling on the right is obscured from view through mass planting.
Section boundary meets road on the left – no threshold or transition zone between dwelling and carriageway which is usually provided by the presence of a footpath. The change in topography perhaps works as a replacement threshold.

Bend in street helps to frame the beautiful views of out to Pegasus Bay.

Dwelling on the right are well distant from the street with no street frontage or dialogue – are oriented to face the views north rather than the street.

Dwellings on the right are also oriented to the view but maintain more of a dialogue with the street due to closer proximity.
The vast majority of images documented in the visual essays speak highly of separation and introspection; buildings standing alone surrounded by space and avoiding direct confrontation with neighbours; high, impermeable fencing distinguishing section boundaries and both physically and visually separating private spaces from the public realm; minimal dwellings had living areas fronting the street; and vegetation was used to visually buffer and conceal dwellings from street view. This streetscape typology is characteristically found in the outer suburban buffer and conceal dwellings from street view. Those streets which hinted at moving away from this trend, such as Els Close, Golflands [Fig. 4.16], Triumph Road, Flatbush [Fig. 4.12] and parts of Chester Street West, Christchurch Central [Fig. 4.25] were typically ones of higher density where individual dwellings were lined up in rows, touching their abutting neighbour(s). These typologies conveyed a stronger dialogue with the street space as they were positioned relatively close to the designated pedestrian path and numerous had front yard spaces which weren’t visually obstructed from the street (and in some cases were also physically free from division with the street space). On average Christchurch’s streets were wider than those of the Auckland, as exhibited in by the streets mentioned above.

Surface materials were consistent throughout both visual essays. The materials palette was very limited, comprising mostly asphalt carriageways, grass berms and concrete footpaths. The carriageway was given the majority of street space signalling the hierarchal importance of the car. The presence of curbing is consistent with all streetscapes, as a distinct measure of segregation between pedestrians and motor vehicles.

Perhaps the most alarming portrayal of the entire visual essay was the lack of people, of human life. The ever-presence of cars seems to have replaced that of people. This may be in part due to matters of density. In physical design terms, one
doesn’t design or build density but one can design in accordance to density or at a certain density. As displayed in the visual essays, streets void of people don’t speak of liveliness or community. Zoning regulations dictate how many people live within a certain area and so the level of street activation is in consideration of the living density. Policy makers have a huge hand in aiding street activation through the simple matter of determining street populations. It may be that the general void of people in these scenes can be attributed to some extent to the time of day the photograph was taken – most were documented on weekdays between the hours of 9am-5pm when the majority of the population leaves their residential neighbourhoods to work. Or maybe this lack of human activity on the street is more reflective of the level of introspection in today’s society?

All in all, compositional elements of Auckland streetscapes are not unlike those of Christchurch. In fact, there is a lack of significant differences in typical street layout between the two cities. A consistent condition over all streets, regardless of zoning character, was the non-confrontational nature between the public and private realms of the streetscape – that is, the dwelling and the street space. Whether by grass berm, fencing or excessive front yard setbacks (in some cases, all of the above); New Zealand houses tend to maintain a threshold or transitional buffer between their private interior realm and the public street realm. In this scenario the interior dwelling is the setting for life, private backyard space is secondary and therefore there is little desire for inhabitants to create a dialogue with the public domain of the street. This indirect relationship may be attributed to the level of introspection in neighbourhoods today and explain the lack of human presence as alluded to above.

A stark contrast to this common interface condition can be found in the historical residential /mixed use precincts of the Ultimo-Pyrmont Precinct in Central Sydney. The local residential streets have generally maintained their historical composition, extending back to the 19th century. These streets, together with multiple parks and squares, form the public
domain network of the area. The distinctive residential streets are greatly comprised of narrow lanes and fine grained terrace housing. A streetscape sample from this historic network of residential streets is Ada Place [Figs. 4.45 - 4.46]. With a street width of approximately 6 metres, and resultantly a distance of exactly the same between adjacent dwellings, the ambience within the street space is one of semi-public and simultaneously, semi-private. The explicit lack of threshold space between the carriageway and adjoining dwellings leaves the public domain user wondering if they are in fact treading on someone’s front yard. This streetscape condition manifests an intriguing ‘shared’ realm where the street space is greatly relied on by residents for external recreational use and therefore the visitor may no longer feel conviced of a solely public domain. Various levels of social activities and encounters can be assumed to arise from such a realm, lending to a lively and socially interactive streetscape.

Interesting the Local Planning Authorities are trying to slowly phase out this street condition by specifying in the Urban Development Plan (UDP) for Ultimo-Pyrmont Precinct, that new development is to provide for widening of carriageways where streets/lanes are less than 12 metres between adjacent properties. New developments are to provide for adequate footpath widths and may involve further setting back of buildings to ensure a 12 metre wide space between dwellings is created. It seems that issues of privacy are the driver behind this development control: Although the general ‘Built Form’ controls of the UDP allow for the continuation of street definition by perimeter building development, it is deemed that this treatment to streets outside of mixed use ‘activity strips’ (e.g. narrow, residential streets) is inappropriate and therefore, development must instead provide “a range of transitional spaces between the public domain and private environments.” It seems that such a unique streetscape composition is at risk of becoming extinct as the modular suburban street, where fences and setbacks support separation and introversion, continues to devour the urban fabric.
Earlier reflections into Jacobs’ book and the Manual for Streets has revealed a vocabulary of the physical, designable qualities of streets which contribute to the creation of ‘great streets’ in general and of residential streets with a sense of ‘place’.

Jacobs book attempts to fill the void between descriptions of the human life that takes place on streets and analysis of the actual physical nature upon which these activities unfold. He refers to Nikolai Gogol’s magnificently described rhythms, activities, mysteries and illusions of “Nevsky Prospekt” (Main Street of St. Petersburg) as documented in Berman’s writings and Carl Schorske’s work on the Vienna Ringstrasse, which explains how the emergence of modernism has influenced the nature of what is on the encircling avenue. The ‘greatness’ of each street is portrayed in the writings but “there is little that tries to relate uses and general human activity with the details of street design.” The primary interest into his inquiry of great streets is the “good space components” that exists whatever the social and economic circumstance may be. While the MfS details its own vocabulary of the physical, designable criteria for the creations of residential streets which are community and people-oriented. This criterion is translated into technical guidance for the design and construction of new residential streets as well as existing streets being re-designed or redeveloped.

The visual essays of Auckland and Christchurch streetscapes have revealed common characteristics of the residential street scene in New Zealand and have enabled comparisons to be made between the physical qualities of residential streets within differing zones. Additionally, the essays have provided exemplars of how some ‘physical, designable’ criteria are visually translated into a real-life context, “Determining criteria for the best streets is one thing. Knowing when they are present may be another.”

Revelations made in this chapter indicate that analysis into the physical, designable qualities of streets can indeed provide valuable insight for policy makers and design practitioners when it comes to developing guides and manuals for new
streets. The departing question however, is how do these translate to experience and perception? Jacobs speaks of a certain ‘magic’ to great streets and subsequently in their making; “a designer will know and understand that there is an open end: magic.” A street that possesses magic will attract visitors because they simply want to go there, not because they have to. Magic brings with it an element of joy, escape and excitement to the experience of being in a street. A combination of imagination and inspiration involved in the street design process may be the most crucial ingredients in summoning an open end to street experience. It is therefore quite possibly the creativeness in the making of streets that holds the key to obtaining magic. “People need to think creatively about their various roles in the process of delivering streets, breaking away from standardised, prescriptive, risk-averse methods to create high-quality places.”
analysis has provided various knowledge, models and insight into the design of streets worldwide, from both a contemporary and slightly more historical account. While the case study depictions have provided a snapshot into the current conditions of streetscapes in New Zealand and evoked reflection upon their physical, designable characteristics. The analysis phase ends on the note of ‘magic’ as expressed by Jacobs; there is magic on great streets and in their making. Imagination and inspiration as crucial ingredients of creativeness will ignite the magical element in streets. The research by design phase now takes stage in the pursuit of magic.
4 Ibid; p2
5 Ibid; p3
6 Ibid; p8
7 Ibid; p270
9 Ibid; p279
10 Ibid; p9
11 Ibid; p270
14 Ibid; p7
19 Ibid; p54

notes

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Ibid; p57

Ibid; chapter s 6-11


Ibid; p10


Ibid; p26

Ibid; p28


Ibid; p37

Ibid; p35


Ibid; p8

Ibid; p9

Ibid; p11

Ibid; p313

The design research chapter sets the scene for using design as a tool for researching. Definitions of such an endeavour are outlined and placed in a contemporary context, exhibiting how research by design is used as a think-tank for international institutes, and its importance as a research tool within the discipline of Landscape Architecture. A design strategy is detailed and presented as a methodical diagram, providing a framework under which design explorations for future streetscape visions can commence.
“Design is a way of inquiring, a way of producing knowing and knowledge; this means it is a way of researching.”¹ To this point inquiring has been the focus of the research project: inquiries made into global issues of sustainable city growth; inquiries into new housing models based on compaction and increased density; investigations into contemporary lifestyle trends both overseas and within New Zealand; perusal of “good” street design principles and lastly, inquiry into existing street conditions of case study sites.

All this inquiring has enabled insight into the current street condition within Christchurch and Auckland Cities. And all this inquiring has led me to form propositions about the way some things shouldn’t be. Instead, how they could be.

The design phase now takes the stage as a means for testing these propositions. Peter Downton emphasises the ways in which designers work as researchers, explaining that: “Designers make propositions about the way some thing or things could be; their propositions incorporate speculations about desired ways things will work and look; they want to know what will transform the existing into the desired; they want to find the ways and means to achieve the desired.”² This phase is essentially a testing forum. Current conditions are challenged and the outcomes are alternative visions for future streetscape design. The depiction of ideas generated in the design phase adds to the public and private sector debate of housing development and renewal in New Zealand.
The approach of research by design is epitomised by the Why Factory, an independent ‘think-tank’ run by MVRDV and Delft University of Technology: a research institute where independent research projects, PhD programs, Postgraduate studios and various classes, workshops and debates are run. “The Why Factory wants to give argumentation back to the architectural and urbanistic world.” The factory is founded upon researching possible directions for the future of urbanity. It is a visualization think-tank for future cities, where possible theoretical models are devised and counter proposals are made for existing cities.

Before the original premises were destroyed by fire, the Factory was housed on the top of the Architecture Faculty building at Delf University. Founder of the factory, Winy Maas (Professor in Architecture + Director, MVRDV), envisioned the next step of the Factory’s studio to be a green, open storey on the tenth floor “where urban landscape architecture could be given a more prominent place in architecture, and in the world.” Reflected in his think-tank model, Winy Maas touches on the notion of landscape architecture taking place within the scene of urban research. Support of this notion is presented by Deming & Swaffield in an early chapter of their book Landscape Architecture Research. The authors surveyed the scope of landscape architectural knowledge, to identify four areas of research priorities in the North American discipline. Two of these focus areas are on healthy & liveable communities and urban regeneration; both influential elements for future city visualization.

The important role of landscape architecture within the urban realm is exemplified by the theory of landscape urbanism. A theory generated over the past decade where landscape has emerged as a model for use in urban conditions, particularly as a medium “uniquely suited to the open-endedness, indeterminacy, and change demanded by contemporary urban conditions.” Landscape urbanism suggests that discussions of the city are moving towards a hybrid locus comprising landscape, architecture, urban design and planning. As a result the urban realm manifests as a particularly fruitful setting.
for research by design.

Ultimately the Why Factory model epitomises the concept of design as research, where the production of models and visualisations is a way of researching possible future directions for urban centres and cities alike. Future thinking within any design discipline is a creative process that involves engaging the world in an arbitratative way, based on knowing and imagining. And so the visualisation of possible future scenarios is a fundamental element to research within the discipline of landscape architecture.
While Delft University of Technology is lending its design research expertise to the Why Factory think-tank and successively stimulating argumentation in the architectural and urban realms, its Chair of Landscape Architecture department is also contributing to the undertaking of design research. One such output being a recent publication (released 2008) which illustrates landscape architecture’s own methods and research techniques, simultaneously affirming the central position of design within the discipline and demonstrating strong relations with architecture and urban design/planning. *Composing Landscapes: Analysis, Typology and Experiments for Design* by Clemens Steenbergen, holder of the Chair, collates a series of drawings that have developed through research within the department and collectively demonstrates the pivotal role of drawing within the act of design, and furthermore as a method and technique of design research.

“Research by drawing is central to this book.” So too is research by drawing central to this thesis. Steenbergen expresses how each drawing is like an answer to a question and through the interplay between thinking and doing, more questions become apparent. The drawings illustrated in his book are wide-ranging and represent a single step in a particular thought process. The first category of drawings are analytical - exposing abstract qualities and potentials, reducing complex landscapes to an isolated element; “diverse qualities such as size, scale, proportion, rhythm... openness and containment... material, texture and colour.” While the second category of drawings are experimental - the drawing plays the role of a catalyst, translating ideas existing only in the mind of the designer into a graphic form at which point another stream of thought opens up to carry the idea further.

Because each analytical drawing in the book speaks of a unique investigation, the examples are further categorised into drawing techniques. The first technique involves the particular way in which an existing design is presented. These encompass *parallel projections* and *converging projections*. Parallel (or Axonometric) projections involve such drawings as ground...
plans, sections, elevations and isometric + oblique projections, whereas converging projections take on the form of central, two + three point and birds-eye perspectives. In addition to the way in which a design is presented (parallel and converging projections) the examples in the book also display the way in which a design is analysed in a composition. These involve the operations of reduction, addition, subdivision, demontage, montage and transformation. Reduction involves the reducing the complexity of a structure through choice of what is drawn and what is not. Addition involves adding information to a visible structure or design such as a system of measurement while Subdivision means re-arranging components of a whole into certain categories. Demontage involves separating elements form a programmatic landscape into layers and then for example, projected above one another whereas Montage accumulates disparate elements in such a way that they lose their autonomy e.g. through superimposition or collage. Transformation changes forms and characteristics by methods of rotation, rescaling, inversion or digitization.
Steenbergen distinguishes two research methods that can be performed with the aid of drawing: **design research** and **research by design**. He describes design research as the "analysis of existing designs or precedents."\(^{14}\) As mentioned earlier, one division of examples in his book are analytical drawings, some involving the exposure of abstract qualities and potentials of an existing design and others which involve reducing complex landscapes down to an isolated element [Fig. 5.00]. These particular drawings allow for certain aspects to be critiqued in regards to one another and so the production of such drawings can be thought of as **design research**. Drawing as a way of analysing an existing landscape (design) enables the researcher to gain insight into the spatial dynamic of a design and furthermore to creatively translate these insights or findings into a new design.

In comparison, **research by design** involves "the formulation of new designs."\(^{15}\) The second division of drawing examples in the book are experimental where the drawing plays the role of a catalyst. In these particular drawings, the designer projects his or her ideas into an existing context or devises the conditions according to his or her imagination. The variability of the object and the context in such a drawing is deemed experimental as the designer is exploring new solutions and testing out new proposals [Fig. 5.01]. The production of such design drawings is thought of as **research by design**.

The drawing techniques previously detailed range from parallel and converging projections to operations of reduction, addition, subdivision, demontage, montage and transformation. It should be noted here that in principle all techniques can be used in both design research and research by design.\(^{16}\) The annotations highlighted in red within Figs. 5.00-5.01 are key elements of the drawing process which are to be explored in the following chapter.
“copyrighted image”
"copyrighted image"
Design research and research by design amalgamate in the final chapters of this thesis under the umbrella of ‘projective’ design, described by S. Swaffield and M. Deming as a "unique agency of design process for research outcomes." The term ‘projective’ is to conjure notions of foreseeing future outcomes guided by research inquiry. Design research and research by design are both tools of inquiry and of foreseeing, and so are indivisible steps manifesting the Design Strategy. This thesis adopts the distinction between design research and research by design as proposed by Clemens Steenbergen in his book Composing Landscapes: Analysis, Typology and Experiments for Design - and as explained under the previous subheading. These two research methods are characterised by the role of drawing as a research technique and are employed as the design strategy for this thesis. As devised by De Jong, these two methods are determined on the basis of the changeability of object and context. Design research involves the analysis of a determined object in a fixed context or a determined object in a changeable context, whereas with research by design, both object and context are changeable.

In light of the terms, definitions and categorisation of drawings and methods laid out in Steenbergen’s Composing Landscapes, I have devised my own design strategy from which to continue this act of researching by designing. The design strategy is a systematic framework used to guide the creative process where the anticipated outcomes are visual projections of alternative scenarios for future streetscape design.

**Design Research (analysis)**

Design research, as the initial step in the strategy is a manner of investigation. This phase deals with a determined object and determined context (existing condition within a selected street) and so analytical drawing techniques are applicable. Analytical drawings are employed as a tool to investigate a particular street design principle (object) existing within a determined streetscape (context). Drawings in the form of ground plans or sections - parallel projections - are used to expose an abstract quality or potential within that streetscape. The street composition is reduced to basic forms to enable a desired quality to come into focus. Such qualities can then be critiqued in comparison to other contexts.
Research by Design is the secondary step of the strategy and is further categorised into ‘design experiment’ and ‘experimental design.’ These subcategories, termed by Steenbergen, are distinguished on the variability of object and/or context. Experimental drawing plays the role of a hypothesis in this step, evoking the possibilities for change by projecting new images into existing or variable contexts.

Design Experiments are set within a determined context "on the basis of a variable object, or the variability of an object in a context." Design Experiments are set within a determined context "on the basis of a variable object, or the variability of an object in a context." In this section, a design generator is introduced in response to the quality previously exposed in the Design Research (analytical) section. The design generator proposes an alternative principle as a way of challenging the accepted convention. A revised drawing generated by the proposed principle is produced using the same drawing technique as the analysis in order to clearly convey the differences evoked. Within this experimental stage, new visions emerge from the transformation of familiar design contexts.

Experimental Design is the projection of new scenarios where “both object and context are variables” so experimental compositions of new landscapes are created. “The goal is to stimulate inventiveness.” As a final step in the strategy, the generators act as catalysts to produce new streetscape visions. Montage perspectives are used as a drawing technique to present these visions, opening up a stream of thought for future street design.

The diagram in Fig. 5.02 exhibits the structuring of the design strategy. This strategy constitutes a loose view of method. The term ‘method’ within a scientific context is considered to be repeatable and likely to obtain the same outcome by another follower if the conditions are kept identical. However the discipline of design does not adhere to methods concerned with replicating outcomes; “the process is still more-or-less repeatable, but the outcome is expected to vary and not be able to be prescribed.” Landscape architecture is tied to a context and so by nature, context will always be a variable condition.
threatening to disrupt any prescribed method. The design strategy used within this research project describes a path or a way of doing things that has been reflected upon and therefore, under a design context, constructs a method.

Through the case study phase, numerous elements were identified as being key components within existing New Zealand streets. The list is long and the task of challenging each one is beyond the scope of this thesis. Four existing conditions are selected to establish the foundation for the design strategy. It is anticipated that this strategic model will provide a framework for which testing of any streetscape condition can operate. In the following chapter, the strategy is executed four times to demonstrate the operation and associate outcomes.
<table>
<thead>
<tr>
<th>context</th>
<th>existing condition</th>
<th>graphic</th>
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<th>principle</th>
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<tbody>
<tr>
<td>living 3 zone:</td>
<td>prescriptive</td>
<td>segregation of street functions via physical barriers; enforcing linear movement and prescribed behaviors, notably by the presence of vertical elements.</td>
<td>cross section</td>
<td>smooth space</td>
<td>temporality</td>
</tr>
<tr>
<td>Winchester Street</td>
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<tr>
<td>living 4A/B zone:</td>
<td>public/private interface</td>
<td>various spatial buffers are used to establish a clear boundary between public and private realms of a street, predominately in the form of front yards/gardens, front porches, fences or gates where an abrupt transition made clear.</td>
<td>ground plan</td>
<td>betwixt + between</td>
<td>threshold space</td>
</tr>
<tr>
<td>Chester Street West</td>
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<tr>
<td>living 2 zone:</td>
<td>edge definition</td>
<td>dwellings are oriented to create a definitive edge to the streetscape, evoking a feeling of enclosure. A sense of rigidity of the build form is portrayed, along with the perception of a static environment or fixed system.</td>
<td>ground plan</td>
<td>artifact</td>
<td>flexibility</td>
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<td>Geraldine Street</td>
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<tr>
<td>living 1 zone:</td>
<td>hidden networks</td>
<td>a street's infrastructural system involves a hidden network of water, electricity and telecommunication grids, visually concealed beneath ground. Placement of utilities and overhead wires underground is general street practice.</td>
<td>cross section</td>
<td>infra-structure</td>
<td>exposed systems</td>
</tr>
<tr>
<td>Hudson Street</td>
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</table>

**new scenario**
- both object + context are variable

5.02 Design Strategy | Diagram of Structure
design research can ultimately be thought of as a testing phase. A design is a speculative proposition and therefore can be evaluated by others and the designer themselves. "Any form of simulation (be it drawing, model or computer representation) of a design work is part of a testing of a proposition." The methodology into this testing phase has so far been outlined in this chapter. The following two chapters will involve the description and visual representation of these design ideas. Such experimental testing of ideas will indicate any level of promise or may result in the decision to abandon the proposition entirely. Either way a level of knowing will be achieved.
2 Ibid; p91
6 Ibid; p17-29
9 Ibid; p23
10 Ibid; p24
11 Ibid
12 Ibid; p32
13 Ibid
14 Ibid; p19
15 Ibid
16 Ibid; p33
20 Ibid
21 Ibid
22 Ibid; p389
23 Ibid
25 Ibid
The design generators chapter sets in place the visual design element of the thesis. As previously outlined in the design strategy, this chapter represents the ‘Design Research: Analysis’ phase and the ‘Research by Design: Design Experiment’ phase of the strategy [see Fig. 5.02]. A series of four design generators set up four theoretical frameworks which argue for new design principles to challenge the status quo. In addition, each generator is visually represented as a graphic montage, expressing the key idea(s) of its founding principle. One Christchurch streetscape has been selected under each design generator; firstly to provide analysis of the existing ‘status quo’ principle (Design Research: Analysis), and secondly to provide a blueprint on which the new design principle will be imposed (Research by Design: Design Experiment).
The design generators in this context are simply a tool for thought. In the Design Experiment phase, the design generator plays the role of a catalyst. Essentially it challenges a conventional component of existing streetscapes. Smooth Space, Betwixt + Between, Artifact and Infrastructure are design generators encapsulating a design principle which challenges the status quo. They are in their own right a tool for thought, questioning the way we currently design streets and stimulating alternative visions for future debate.

“Street design, like any other creative act, always involves leapmanship, a point where it is necessary to jump from the known to something else that is desired, without knowing for sure where one will land.”

Each generator stands as a layer of the landscape; one level of a composed streetscape environment. These single layers have the properties and attributes enabling them to be sufficient on their own in creating a unique streetscape. They can also be combined with other layers/generators to comprise a richer environment - here the Experimental Design phase (Chapter 07) adopts key principles from one or more design generators to formulate new streetscape scenarios.

The selection of such a tool in this phase of the thesis is owed to its demonstrative capabilities. While each design generator is described through text, grounding its theoretical position in relation to the insights of the thesis thus so far, it is through the use of visual simulations that the dynamics of each stance are summarised in such a way that is comprehensible in an instant. Regardless of the reaction by the observer, an image prompts an immediate understanding of an idea and nonetheless ignites imagination and initiates debate.
Existing Condition | Streetscapes are prescribed - they facilitate boundaries, both physical and behavioural, defining systems of inclusion and exclusion. Within the streets of Christchurch, functional segregation is achieved through implementation of kerbs, berms, changes in surface materials and physical barriers. Linear movement is enforced, leading to the notion of a street as predominately a thoroughfare. Behaviours are assigned to particular areas of the street. Cars are allocated to the expansive asphalt surface which flows through the centre of the street. Pedestrians are confined to the peripherals of this centre strip, slightly raised above the terrain of asphalt and physically bounded from venturing onto private plots by two meter high fences or walls.

Amongst Allan Jacobs’ list of physical qualities crucial for creating streets is the following criterion: ‘Places for People to Walk with Some Leisure.’² He vouches that the balance between pedestrian and vehicle space greatly influences the desirability for leisurely walking. For this balance to be achieved, he insinuates that the solution lies in the degree of physical separation between pedestrians and vehicles as this principle goes hand in hand with safety. Rarely is there any free movement diagonally or perpendicular to the direction of the asphalt corridor. Movement is linear because it has been prescribed to be linear.
SMOOTH SPACE
NOMADIC MOVEMENT
FREE ACTION
LOOSE FORMS LOOSE FUNCTIONS
HORIZONTALLY

EVENT NATURE, HETEROGENEOUS SPACE CHARACTERIZED BY ITS FLUIDITY, CONTINUOUS VARIATION, PLURALITY OF DIRECTIONS
**Design Principle** | Boundaries indicate limits; behavioural limits, functional limits and interactive limits. The defined spatial boundaries of existing streets are designed to optimize one kind of function; the smooth circulation of cars. This defined spatial system, encouraging predominantly linear through-fare movement, greatly reduces the ability for public space to facilitate other user needs. Some of the most interesting and rich spaces within an urban environment are where the occupants pursue activities not originally intended for that space. There is an inherent richness in those activities bred from freedom of choice. The design principle of the Smooth Space generator is to ignite freedom of choice by opposing such spatial boundaries, erasing prescribed functions within a street and celebrating the creative spontaneity that stems from urban residents themselves.

Through the venture of unintended activities, spaces become “loose”. This concept is examined in the book, *Loose Space: Possibility and Diversity in Urban Life*³ where Karen A. Franck and Quentin Stevens explore the varying ways urban residents' appropriate public space to facilitate their own creative desires. Whether these activities are spontaneous, experimental or planned, the editors commemorate how the “looseness” of urban space contributes to the vitality of cities. Thirteen international case studies support this concept of looseness, demonstrating that the richness of physical spaces lies in how people use them. The foundations for the Smooth Space generator stems from a case study titled *Urban Slippage: Smooth and Striated Streetscapes in Bangkok*.⁴ The authors have adopted the concept of smooth and striated spaces from the work of Deleuze and Guattari⁵ as a tool for evaluating the meaning of urban space in Ban Panthom, an old inner city neighbourhood of Bangkok. The tensions between spatial practices of the local and codes of control imposed by the authorities are likened to Deleuze and Guattari’s distinction between “smooth” and “striated” space. “The term ‘striated’ is linked to the Latin: stringere ‘to draw tight.’ In contrast ‘smooth’ is not read as homogeneous but rather as without boundaries or joints.”⁶ Unlike striated space which is structured on hierarchical social control and has authoritative roots, smooth space is identified with nomadic movement, migrating horizontally across surfaces and power exists through the blurring of identity.
“copyrighted image”
Ban Panthom is primarily residential at the heart of the neighbourhood with multifunctional occupation around the periphery. A significant noting by the authors is the impossibility to fully map the functions of the area; activities are often mixed on the same site (residential, retail, industrial) and there is extensive blurring between functions within the same space. This continual negotiation between public and private space demonstrates how the "local, unwritten rules play a key part in the control and use of public space." Within the street network there is a looseness of parts; mobile trolleys are set up as temporary stalls for various periods, accompanied by seats and umbrellas. Some take on a more permanent perch becoming almost an extension of the built form. "Functions slip from house to shop to factory...from sidewalk to restaurant to shrine to car park..." Ban Panthom reflects a spatial network occupied by intensities and events irrespective of boundaries, epitomising the conceptual framework of smooth space.

A step towards the notion of Smooth Space can be found in the following enterprises where the local street residents have made a stance in reclaiming the street space for temporal activities. The residents of Piriti Place in South Auckland unite every eight-ten weeks and all pitch in to create their very own school holiday programme, which involves the group ‘reclaiming’ the street space for games, sports and other recreational activities. On the other side of the globe, Jackson Heights residents have fronted together to win car-free Sundays on 78th Street, creating a temporary public space for families to relax and children to play. This stance was given further recognition when local authorities granted permission to make the street car-free for the entire months of July and August.

The Smooth Space generator explores the temporal/event nature of a street space. It's a non-formal space that allows for the chance encounter, the spontaneous event and the possibility for residents to become the active participant or perhaps even the creator. The street space is left to be reclaimed by people who have the creative rein to occupy the space as they so wish.
**design research analysis**

**street + zone:** Winchester Street, Merivale | Living 3

**subject:** analysis of the level of segregation within a medium density residential streetscape and the identification of such elements which promote the separation of certain activities and user groups.

**research technique:** isolating the physical and spatial barriers of the street which define certain uses within the street space. Concealing all other components of the street.

**drawing technique:** cross section

**components:**
- **vertical elements** | building edge, fences, walls, linear tree planting and linear placement of light posts.
- **horizontal elements** | subtle changes in leveling as conveyed by the cross section. Differing surface treatment is indicated through the projection of the ground plan below the ground section line.

**conclusion:** both vertical and horizontal components of the streetscape are utilised to promote segregation between the realms of public/private and to ensure separation is maintained between user groups, most notably pedestrians and vehicle users. Physical barriers in the form of walls and fences defensively keep members of the public away from private plot spaces while changes in surface materials combined with levelling and linear planting ensures discourages pedestrians from crossing onto carriageways.
design experiment

**subject:** experimental transformation of a user defined space into a flexible event space.

**research technique:** elimination of vertical fixed components and abstraction of the ground plane into a continuous programmatic surface.

**drawing technique:** cross section

**components:**
- *built form and ground level* | established by the thick black lines of the cross section.
- *program* | indicated by text.

**conclusion:** all vertical components within the streetscape are eliminated leaving only the built form as a spatial edge. A continuous ground surface conveys a space free from user-specified areas. An event space is created evoking a range of possible spatial functions and encouraging diversity of activities, events and users.
Existing Condition | We are never totally enclosed within a house, as walls are interrupted by windows and doors speaking of linkages to the outside world, an inhabitable interior inevitably makes reference to surrounding worlds. The condition being referred to in this generator is that of the threshold – both dividing and joining an “inside” and “outside.”

This interface between inside/outside, house/street, public/private undertakes various shapes and forms within a street environment. Thresholds, or transition spaces, have been previously addressed in the vocabulary of criteria proposed by both Jacobs and the Manual for Streets (MfS). The following criteria are examples of street design principles which confront the interface of the public/private realms:

"Transparency" (Jacobs) - Streets with a degree of transparency in their edges between the realms of public and private create a sense of curiosity. Windows and doors evoke interest as to the functions behind a street wall.

"Where streets meet buildings" (Manual for Streets) - The nature of threshold spaces between public and private realms needs to be carefully managed, including the nature of front gardens. "Continuous building lines are preferred as they provide definition to, and enclosure of, the public realm."

Each criterion addresses the grey realm between public and private, between street and building. Interestingly they each take a different stance on what a threshold entails. Jacobs speaks of transparency as being key, prescribing the blurring of boundaries to evoke curiosity, whereas the MfS speaks of the importance of providing definition through a continuous built form edge. One speaks of loose space, the other of tightened space - where looseness invites questioning and tightness portrays an abrupt transition. Fig 6.07 communicates a tightened space where the interface between interior/exterior and private/public is signalled only by the presence of windows and doors on a vertical facade. Fig 6.08 however displays a threshold space rather than an abrupt transition, in the form of mass hedge planting between the realms of public/private. The area of vegetation acts as a soft buffer between house/street and evokes questions of form and function.

betwixt + between
BETWIXT + BETWEEN
INTERCHANGABLE
BOTH AND EITHER-OR
LOoseness
ELUSIVE SPACE

UNCERTAINTY, PUBLIC/PRIVATE REALMS, BLURRING BOUNDARIES, INSIDE/OUTSIDE, QUESTIONING, FREEDOM OF CHOICE
Design Principle | A threshold is a point where one traverses a boundary between inside and outside, between public and private. A threshold space is an in-between space, where boundaries are often blurred – a space that loosens up to the possibility of being both and either-or. “Thresholds are always loose for playful possibilities”15 - a wide range of perceptions, social encounters and activities become possible. Quentin Stevens, in his essay on *Building Thresholds, Liminality and Public Space*,16 illustrates the various ways in which people appropriate threshold spaces within the public realm: “Public spaces offer both opportunity and risk largely because of their blurred, indeterminate in-betweeness.”17

Skateboarders often frequent building thresholds where they are interested in testing the physical characteristics of the space in terms of their material, height and inclination. Steps, ledges and handrails become spaces of occupation; whether sitting and resting or conversing with others. Groups of performers even gather in these in-between spaces providing entertainment to onlookers. Stevens accounts an observation of a ritualistic form of behaviour occurring within a threshold – wedding photographs of a couple on the steps outside Parliament House in Melbourne. “Steps emphasise that the couple is in a directional movement, symbolising a social progression.”18 An example of how such behaviour brings new meaning to thresholds.

Betwixt + Between: neither the one nor the other. This generator explores variations on the theme of the threshold – where it’s essential function is to hold separate worlds together19 and in doing so, blur the boundaries between the two. The threshold is celebrated as a space (or object) for creative expression of its own. This design generator builds on the notion of a threshold space as ‘neither the one nor the other’ and explores how the blurring of functions also appends such a space. The ‘in-between’ spaces offer a variety of interpretations or actions, appropriated by citizens to pursue activities at they so wish. Ultimately, the Betwixt + Between generator explores freedom of choice stimulated by elusive space.
design research analysis

**street + zone:** Chester Street West, Central City | Living 4C + 4B

**subject:** analysis of threshold spaces (in-between realms) within a high density residential streetscape.

**research technique:** framing of definitive public/private spaces, as a result identifying the threshold spaces of in-between public/private realms.

**drawing technique:** ground plan

**components:**
- *vertical elements* | communicate physical definitions between public and private realms, shown with red lines.
- *horizontal elements* | a change in gradient or material which may contribute to subtle distinctions between public and private spaces, indicated by black lines.
- *dwellings* | strictly private realms, represented as grey block shapes.
- *public realm* | shaded in light grey.
- *semi public/shared realm* | represented by areas in orange.

**conclusion:** vertical elements provide the strongest tool of distinction between public and private realms. With the absence of these elements along the edges of driveways and pedestrian access ways to the rear of dwellings, the transitional nature of the threshold becomes stronger as the level of ‘unknown’ increases.
**design experiment**

**subject:** experimental montage of dwellings within a street.

**research technique:** *fragmentation* of the linear composition of street dwellings and rearranging the parts into a new composition.

**drawing technique:** ground plan

**components:**
- *shared space* | black represents the network of spaces between buildings.
- *dwellings* | indicated by white rectangles.
- *potential transitional space* | dark grey areas indicate the peripheral space around private dwellings which could constitute transitional areas between the realms of public and private.
- *potential circulation patterns* | white dotted lines hint at possible circulation patterns for such a composition.
- *existing plots* | white dashed line

**conclusion:** dwellings are dispersed from the periphery to take up new positions within the central street space, no longer constituting the street ‘edge’. The new composition ensures that the linear character of the street’s public space is transformed into an intertwining spatial network which weaves around the built form. Public and private realms now deviate from their once linear nature, enhancing the area coverage of ‘in-between’ or ‘undefined’ threshold space.

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**betwixt + between**

06 design generators
Existing Condition | Design guidelines for the orientation of dwellings within a street often prescribe conformity to the character of the neighbourhood in order to achieve visual continuity and enclosure. "Asymmetry, irregular alignment and haphazard use of materials, including different coloured materials, tend to erode visual containment and continuity of the street." This principle is supported in Jacob's list of criteria for great streets:

"Definition" (Jacobs) - Boundaries which define the edges of a street can be achieved both vertically and horizontally. Proportion and spacing of buildings and other space defining elements can determine whether a street occupier feels pleasantly enclosed or nervously exposed. The work of H. Maertens and Hans Blumenfeld examine the height to distance ratio appropriate to the nature of street experience."

"Complementarity" (Jacobs) - Buildings which resonate with each other provide a sense of order and regularity to a street."

Orienting dwellings to achieve edge definition and create visual regularity within a street helps to create feelings of comfort and enclosure for residents and street users. On the other hand this criterion carries a sense of rigidness and conveys a static environment. Effectively, the residential housing environment could be likened to a fixed system that permits choice and adaption only within the parameters of a controlled menu. Not to say this is a negative thing – visual continuity of the built form does in fact create attractive streets. The food for thought here is in regards to creative restriction and adaptability of the streetscape in light of a rapidly changing natural and social world.
ARTIFACT
FLEXIBILITY
ADAPTATION
VERTICALITY
PRE FAB

EVENT NATURE, TEMPORAL STRUCTURES, MODULAR HOUSING,
**Design Principle** | The *artifact* generator represents a strategy of loose modularity in the approach to housing and inhabitation of the street space. The use of modules in constructing a residential environment preserves openness to choice, arrangement and variety. Modules, as three dimensional structural units, combine with other units to create inhabitable spaces. Due to its flexible nature, this system is receptive to environmental and cultural changes which may demand restructuring. Modular compositions offer malleable environments to accommodate residents changing needs and enable quick responses to unforeseen environmental events.

Within the private realm, modules can be individually customised to reflect residents’ housing needs while in the public street realm, modules can be appropriated for community uses or structured to accommodate neighbourhood amenities such as shared gardens, event spaces and spaces for play. A modular streetscape can create a dynamic environment which morphs with the evolution of community needs and celebrates continual possibility.

Not only does such an environment accommodate the needs of the community and the individual, but the level of flexibility akin to modular (temporary) structures becomes a product for resilience. Consider waterways, tectonic plates and the soils we build on - all momentous substances that move, vibrate, reform according to the vices of Mother Nature. The construction of permanent and rigid human interventions do not harmonise with such environmental events. Strategies of loose modularity however, are likened to flexible extensions of the land which are capable of moving with and adapting to changing natural systems.
**design research analysis**

**street + zone:** Geraldine Street, Edgeware | Living 2

**subject:** analysis of the existing composition of the built residential form and the consequent edge definition of the street.

**research technique:** *selection* of the built form and the edge of the carriageway as isolated elements within the street composition.

**drawing technique:** ground plan

**components:**
- *dwelling footprints* | shown in light grey
- *carriageway* | black dotted line signifies the outline of the carriageway
- *defined street edge* | two thick red lines indicates the edge of the street established as a result of the built form
- *public space* | the public realm of the street constitutes the space within the red lines and is represented by two shades of green

**conclusion:** the orientation of dwellings within the streetscape creates a strong visual edge to the street as well as signalling a somewhat blurred boundary between the public and private realms.
**design experiment**

**subject:** experimental projection of the dwellings as malleable structures rather than rigid fixtures.

**research technique:** *addition* of an external element and reconstruction of the selected data into new compositions.

**drawing technique:** plan overlay

**components:**
- *original dwelling footprints* | shown in light grey
- *new dwelling footprints* | shown in dark grey
- *original street edge* | two thick red lines indicate the edge of the original street
- *water bodies and streams* | shown in blue

**conclusion:** the introduction of water, as an external factor, is to signify the possibility of environmental changes which may impact the nature of the street. The build form becomes a network of loose modules, capable of movement in response to change. As the modules are repositioned in relation to the introduction of water, the once rigid street composition gives way to a more flexible fabric.
Existing Condition | Streets themselves are part of an infrastructural network, a system of mobility through the city providing a connective lattice. Delve deeper into this context and we find another tier of infrastructural systems; a hidden network of water, electricity and telecommunication grids, visually concealed beneath ground. The placement of utilities underground has been the general practice of street design for decades. The presence of overhead wires and other above ground utilites is considered a hindrance to the visual quality and ambience of an area: "As a measure to beautify and stimulate redevelopment reinvestment in downtown, the Highland/Main Streetscape initiative encompasses the undergrounding of overhead utilities."

The Wellington City Council is also of the belief that overhead wires can be visually unacceptable for property owners and so offer help for owners who wish to underground them, on their Council website. However there has been recent movement towards recognising the role of these underlying systems in our streets rather than concealing them, in particular with regards to systems of hydrology. New approaches to create open systems of urban water management can be seen in contemporary streetscapes where underlying landscape systems, particularly those of streams, are “day-lighted” to reinstatet the relationship between topography and its underlying structures. The “re-naturalizing” of channelized urban streams involves mimicking the ecological processes of natural streams to create a hydrology system that manages flooding, treats storm-water runoff and enhances biodiversity while in turn providing recreational opportunities. This is exhibited in new subdivision developments where the treatment of storm-water is exposed and dealt with above ground [Figs. 6.17 + 6.18]. Such an approach to represents a shift away from the standardisation of infrastructural systems based on technical criteria, towards recognising the potential social, aesthetic and ecological value of exposing these systems.
INFRASTRUCTURE
ACCIDENTAL SPACE
EXPOSURE
PERIPHERY
INHABITABLE

GENERATIVE LANDSCAPE, UNINTENTIONAL SPACE, DAYLIGHTING
Design Principle | Modern urban infrastructure represents a range of networks from those at the city scale right down to underground pipeline systems; from motorways and elevated highways to water-treatment systems and cables. The newly emerged discipline of landscape urbanism focuses on infrastructure, not in the political-technical sense, but on the creation of left-over spaces as a result. “Explorations in landscape urbanism have focused on infrastructure as the most important generative public landscape.”

Infrastructural systems of the twenty first century continuously strive to meet high standards of efficiency within their goal of supplying energy, resources and mobility to areas of urban and peri-urban landscapes. Landscape urbanism recognises that the spaces left over from these systems, predominantly accidental in nature, are in fact valuable public spaces that “must therefore be inhabitable in a meaningful way.”

Infrastructure Urbanism was the theme of the Technical University Munich’s symposium in February 2010. The symposium resonates with the infrastructural notion of landscape urbanism, examining the accidental space along the periphery and in the shadow of modern high-capacity infrastructure. The organisers refer to these ‘waste’ areas as “urban space free from explicit definition and intentional design.” The examination of these spaces between infrastructural component and environment within the scope of the symposium is about unleashing their potential as public spaces in their own expression.

The infrastructure generator explores the possibility for the streetscape to reveal rather than conceal the presence of in-ground urban systems and celebrates new ways of inhabiting these ‘accidental’ spaces. These lattices of underground systems are denied their own subsequent ‘waste’ space; unlike infrastructure of a greater scale, these in-ground networks have no peripheral space to be acclaimed as public. But with exposure to and unveiling of these systems; they too can contribute to the creation of new public space. This design generator evokes a new attitude towards hidden infrastructure that goes beyond technical considerations to embrace the spatial qualities inherent as a result of these systems.
design research analysis

**street + zone**: Hudson Street, Bryndwr | Living 1

**subject**: analysis of the infrastructural systems inherent beneath and above the ground.

**research technique**: identification of water, electricity and telecommunications within the street and exposing their position (above or below ground).

**drawing technique**: cross section

**components**:
- *main sewer* | red circle
- *gas main* | orange filled circle
- *water main* | blue circles
- *electricity cable* | green circles
- *overhead electricity wires* | grey outlined rectangles
- *telecommunications cables* | black + grey filled circles

**conclusion**: a network of telecommunication grids and utility systems are concealed from sight and mind. Key infrastructure comprising the foundation for any community settlement is hidden away underground. The streetscape is reduced to a blank canvas once earthworks have been completed, denying the street space of any anatomical expression.
**design experiment**

**subject:** experimental exposure of underground infrastructure to add further components to the street space.

**research technique:** *isolating* existing infrastructural components and *relocating* them within the streetscape.

drawing technique: cross section

**drawing technique:** cross section

**components:**
- *main sewer* | red circle
- *gas main* | orange filled circle
- *water main* | blue circles
- *electricity cable* | green circles
- *overhead electricity wires* | grey outlined rectangles
- *telecommunications cables* | black + grey filled circles

**conclusion:** the underground utility network is revealed rather than conceal, becoming another component within the streetscape. By relocating such infrastructure above ground, a succession of new public spaces is created, stimulating new possibilities for play and interaction.
the design generators have detailed four new lenses as alternative approaches to the perception of street space. This chapter has unleashed new theoretical frameworks for street design involving the manipulation of place, space, metaphor and programme. The proposals are bold and centred around big ideas. Drawing techniques have been adopted as tools for design analysis and design inquiry. The visual diagrams and image montages produced have acted as a catalyst – opening up a stream of thought. In the following chapter new scenarios, these thought hypotheses are projected into existing street contexts as a way of communicating the possibilities for change.
2 Ibid; p270
7 Ibid; p120
8 Ibid; p127
14 Ibid; p57
17 Ibid; p91
\[\textbf{notes}\]

06 design generators

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new scenarios takes the ideas expressed by the design generators and translates them into a street context. This chapter is the ‘Research by Design: Experimental Design’ phase (the final step) of the design strategy [as outlined in Chapter 05, see also Fig. 5.02]. Each scenario is a combination of principles stemming from selected design generators as catalysts in the production of new streetscape visions. Perspectives are used as a drawing technique to present these visions and the projected scenes open up a stream of thought for future street design.
7.00 Superimposition of new streetscape scenario for Portman Street, Woolston, Christchurch (pages 236-237)
07 new scenarios
7.01 Superimposition of new streetscape scenario for Winchester Street, Merivale, Christchurch (pages 238-239)
Superimposition of new streetscape scenario for Simeon Street, Spreydon, Christchurch
future streetscapes  the concluding chapter, compiles the research findings, explorations, insights and design ideas of this thesis. "What has been learnt previously from looking, listening and examining, is not only manifested in the process of designing, it is brought together with the current inquiry in the current circumstance." The future streetscape visions exhibited in the previous chapter are contemplated in correlation to the themes presented throughout this thesis. A brief review is given of a recent course event in street design, organised by the New Zealand Planning Institute (NZPI), as a quick snapshot into current street planning practises in New Zealand. As to the final note, we turn once again to the situation facing Christchurch City in wake of its devastating natural events, and discuss how streetscape design can generate the creation of fresh, high quality living environments for a city facing rebuild.
The core concern of my research has been the role of the residential street in creating vibrant neighbourhoods. The street space is the fundamental public open space within any residential context, particularly when moving to areas of higher density where the frequency of parks and reserves decline. As city populations continue to rise and planning authorities move towards implementing principles of urban consolidation, the condition of the public open space between buildings: the *streetscape*, becomes crucial to the quality of any residential environment. The explorations of this thesis have emphasised the importance of, and the potential for, street design to enhance neighbourhood life.
Unfortunately within New Zealand, street design is commonly influenced by road standards - developed from an engineering perspective and essentially designed around the needs of motorised traffic. The nature of these car-oriented standards seems acceptable for the creation of state highways and local motorways where the context is one of transportation and movement. However when these standards become implemented in neighbourhood streets of a residential context, the liveable, sociable and inhabitable character of a street – terms which should naturally describe a residential neighbourhood - greatly diminishes. This is an issue which has only recently become apparent to, and since recognised within, the powers of local and national authorities.

Some city councils are producing new street design guidelines in recognition of emerging international approaches such as shared-space streets and pedestrian-oriented design (MfS), both emerging concepts in the United Kingdom. The Design of Streets handbook, issued by the North Shore City Council, resists guidance which conforms to conventional engineering thinking and instead gives advice for street design in-line with overseas innovation. The North Shore City Council has recognised that innovative approaches towards street design are successfully being implemented internationally and this suggests “that there are opportunities to review and make changes to existing practice in use in New Zealand.” In 2004, Auckland City Council (former division of the agglomerated Auckland Council) commissioned the upgrade of several central city streets, a number of which have adopted the ‘Shared Space’ concept - the latest thinking scheme being implemented in the UK where streets are designed to give all users freedom of movement. The UK Department for Transport (DfT) has since published an appraisal in 2009: DFT Shared Space Project collating evidence of the scheme’s performance. The following definition of the term is used in the report: ‘A street or place accessible to both pedestrians and vehicles that is designed to enable pedestrians to move more freely by reducing traffic management features that tend to encourage users of vehicles to assume priority.”

‘good streets, good places’ a national perspective

08 future streetscapes
Auckland City Council's initiative involved blurring the distinction between footpath and carriageway through removal of kerbs and the limitation of traffic control devices such as signs, road markings, barriers and bollards etc., the underlying intention of which is to encourage motorists to engage more carefully with their environment, instinctively slowing down. As a result pedestrians and cyclists have more freedom to move how they wish and are granted right of way. Auckland Transport chief executive David Warburton says "the idea of the shared space is to create a vibrant streetscape where people want to linger." The central city's first shared space street, Darby Street, was completed in early 2011. Several shared space streets have also been recently completed in early September 2011, while the remaining streets are currently still undergoing transformation.

Implementation of such a visionary approach to street design is an indication of how urban authorities are experiencing a shift in design thinking. It is encouraging to witness the construction of new projects which exhibit such 'place-making' emphasis in lieu of the traditional transit-oriented corridors.
“Things have to change – we must not let the car dominate when a well designed street can help create sustainable communities....”

“While there were clear benefits to accommodating automobile movement through the city, the negative effects became increasingly evident over the last forty years.”

“Streets should no longer be designed by assuming ‘place’ to be automatically subservient to ‘movement’.”

“In the recent past, many streets have been designed with vehicle movement as priority. This tends to diminish the potential of streets to function as social space....”

“Complete Streets discourages streets that are designed primarily for traffic...”

“For too long the focus has been on the movement function of residential streets. The result has often been places that are dominated by motor vehicles to the extent that they fail to make a positive contribution to the quality of life.”

“Practitioners (and the public) have learnt that investment in high-quality infrastructure can yield benefits well beyond simple mobility.”
Although rising awareness of innovative approaches to street design is being communicated through various media within New Zealand, two significant themes are prevailing. Firstly, New Zealanders are becoming increasingly aware of the negative implications the motor vehicle has on our lives and our living environments. Since the mid-twentieth century the unrestricted use of the private motor vehicle has been the driver behind the development of New Zealand’s transport systems and consequently roads and streets have been designed to accommodate this sole factor. The private motor vehicle has become so engrained within our Kiwi culture that residential streets in suburban neighbourhoods are no longer valued as places and instead they have become corridors for movement – exhibiting the notion that the motor vehicle deserves right of public space above that of people. Urban planners and policy makers are embarking on a stance to overturn this dominance and direct the design of public space and street space alike back to its most important users: people. Pedestrians need be the predominant users when assigning hierarchy to streets; “Activity in the form of people using the street has got to be a critical success factor.”  

Secondly, promotional and educational material acknowledges that on an international front, new and creative approaches to street design are producing high quality streetscape environments. Most apparent in these approaches are cases which succeed in reclaiming the street space from the motor vehicle, and returning it back to its residents. International examples of creative street design continue to be inspirational precedents for New Zealand’s own urban designers. It is recognised that New Zealand wishes to keep in step with these innovative solutions and produce environments of the same calibre. As expressed within the *Design of Streets* handbook issued by North Shore City Council, “We know that change has to take place. Throughout much of the world there is an increasing recognition of the contribution that well-designed urban streets can make in tackling these issues.”
The design generators I have developed here have been a means of visually expressing ‘place-making’ ideas in response to current streetscape conditions. The visions presented in Chapter 07 begin to visually convey the potential for street design to break the barriers of conventional thinking and create streetscape environments which advocate places for people. As briefly summarised below, the spatial issues and environmental principles raised under each design generator hint at the possibilities for future design while stimulating visionary debate.

The design generator smooth space opposes linearity and control, exercised classical street planning, and fosters the concept of ‘loose’ space where freedom of choice is celebrated and creative spontaneity from users is encouraged. The street space is levelled in an even surface where physical spatial barriers are removed along with their assigned function - users are free to pursue activities of their own accord. There is an element of reclamation within this design scenario, where the domineering allocation of street space to the motor vehicle is taken back by the people, for the people.

Stemming from the same concept of temporality, the design generator artifact directs the built components of a streetscape to substitute their rigid structure for a more flexible and malleable form. Modular structures are employed as the form of residential housing and can be individually customised to reflect residents’ needs. Modules are also used within the public realm of the street to accommodate for community amenities and events. Components can be easily added or subtracted to form new structures in response to changing environments and to realign with a neighbourhood’s changing needs.

The design generator betwixt + between investigates the notion of the threshold as an ‘in-between’ space; an opening between inside and outside; the boundary between the realms of public and private. The arbitrary nature of such transitions opens the threshold space up to the possibilities of diverse encounters, activities, movement and play. As Norberg-Schulz notes, “the opening is the element that makes the place come alive, because the basis of any life is interaction.”

Thresholds
are sites where spatial boundaries are blurred and therefore interpretations are varied. Ordinarily the threshold spaces within a streetscape take place on the periphery where dwellings and private properties meet the street. The betwixt + between generator capitalises on this concept of blurred boundaries by drawing variations of the threshold away from the periphery into the street space itself.

The design generator infrastructure, explores the interaction between man-laid ground and the ground created by the earth. It seeks to free the segregation and create a scenario of integration; where the attributes and characteristics of the earth become apparent to the users of its surface. The earth is instead unmasked by our ground interventions to create a streetscape which exposes the nature of the ground below and our man-made interventions. This design scenario aims for a greater understanding between the inhabitants of a street and the inherent qualities of their streets’ foundation by creating awareness through exposure to the land. In the event that the earth moves, immediate access can be made to these services, enabling prompt recovery.

loose space: free rein

An underlying theme emerging from the generator principles and their ensuing creative visions is one of free rein; a looseness of space which opens the possibilities for spontaneity, temporality and play. The activities and uses of space as conveyed in the streetscape scenarios evoke a sense of unbounded freedom where the residential environment is a catalyst for fun. In today’s urban planning realm, restrictions and rules imposed on matters of design ensure a living environment of limitation – in both aesthetic and experiential terms.

The degree of restriction and dictation imposed on some international living environments is reaching absurd levels, as exemplified in the following extract from Larry Ford’s writings on The Spaces between Buildings, where he reflects on
the residential environments of contemporary America: "When doors are left open, garage-dominant houses can look like airplane hangers or caves... Many new residential areas have requirements that such doors be open for no more than a few minutes at a time."\(^\text{18}\) Has such an attempt to maintain this utopian vision – deemed picturesque by its rule enforcers – gone too far? Where is the line between individual freedom of choice and the acceptable level of control applied by authorities on how citizens shall undertake their lives?

To cite restriction and dictation within New Zealand, we need only look to how specific activities are assigned to specific spaces within our urban environment as proof of exercised control. Within a street, pedestrians are designated to a certain area of the street space and motor vehicles to another. Street design predominantly accommodates for single-purpose activities within prescribed areas. Ford explains how “until the eighteenth century, most of the spaces between buildings were multipurpose and vaguely defined.”\(^\text{19}\) Since the industrial revolution and with the rise of the motor vehicle, specialised spaces have been prescribed within our living environments. The suburb’s use of space supports separation rather than containment: the yards, setbacks, verges, parking lots, driveways and sidewalks intentionally assert this separation.\(^\text{20}\) Suburbia of today represents a planned life.

A common connection between the design generators proposed in Chapter 06 and the visionary streetscape scenarios in Chapter 07, is that they advocate a return to vaguely defined spaces - reinstating the historical notion that city streets (particularly of medieval origin) evolved through use of the space as assigned by the local community rather than being designed from above and afar.\(^\text{21}\)
temporary use

An equally prevailing theme emerging from the generator principles is that of temporality. Vaguely defined spaces in turn ignite potential for temporary uses – the possibilities of which are hinted at through many of the design generator visions. These visions attempt to redeem public life in residential streets by catering for varying aspects of human life; from pedestrian movement to social and recreational gatherings and events alike. As exemplified in the smooth space generator, the simple act of removing spatial dividers within a street blurs the boundaries between prescribed functions imposed by authorities and instead opens the streetscape to a levelled ‘stage’ where occupants can pursue activities of their own will.

Temporary uses are vast and diverse, operating as urban catalysts for underutilised spaces. The potential of temporary uses for long-term development are investigated in the research project ‘Urban Catalyst’ and presented in the article Patterns of the Unplanned: Urban Catalyst by Philipp Oswalt et al. The interdisciplinary Urban Catalyst team comprised of architects, planners, lawyers, sociologists and local authority representatives researched “the potential of temporary use and the apparent crisis of classical planning over a two year period from 2001 – 2003 based on the hypotheses that (1) spontaneous, temporary uses can have positive long term effects; and (2) the unplanned phenomena of temporary uses can be successfully incorporated into the planning and management of cities.” While the case study sites were at the scale of large industrial sites and whole precinct areas of cities such as Berlin, Vienna and Amsterdam, the insights gathered into the benefits of temporary uses contributing to urban renewal, are applicable to numerous urban sites of varying scale.

The research uncovered examples where sites of abandoned land had become reintegrated back into the public network through temporary uses. An example is the transformation of an 8.6ha vacant dockland site in Amsterdam into the nucleus of a new 2 km2 precinct development. A 20,000 m2 hall and large abutting open space was allocated by the administration of this site for the purpose of temporary cultural uses. In the medium term the users were intended to ignite a living, mixed-use neighbourhood, while helping to raise public awareness of the site in the long term. Division of the hall into plots used

streetscape visions

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by various groups (ranging from craftsmen, artists and traders to entrepreneurs), created a mass of cultural activity which in turn has provided further stimulus to the surrounding abandoned harbour.

Such a degree of transformation is applicable to any underutilised area (such as a low-trafficked space within a street) and can be as simple as introducing a single temporary installation to provide a catalyst for the future programming of the space. Setting an example of a possible use can be inspiration for other street residents who are looking to escape the routine of everyday life by seeking alternative experiences. Unplanned conditions provide new opportunities for residents to have a greater influence on how the public space adjoining their dwellings is used.

Nowhere is the call for temporary uses to occupy vacant land greater than in Christchurch City, post-earthquake. The event of the Canterbury earthquakes has seen residents, businesses and shop owners etc become more resourceful by recognising the potential of using adjoining public space as extensions to their immediate plot of land. Expansive car parks that very rarely reach full capacity are proving to be ideal spaces for businesses to relocate their stock and continue their services. Likewise, empty sites as a result of damaged and demolished buildings provide a platform for mobile vendors to locate themselves – simultaneously bringing amenity back to otherwise desolate areas [Fig. 8.01]. This infilling of temporary structures in Christchurch is epitomised by the recently launched pop up retail precinct along the severely damaged strip of Cashel Mall in the central city. The inspirational landscape project coined *Re:Start* offers retail and cafe spaces in the form of new shipping containers and is thought to be a world first of its kind.

Brightly coloured rectangular containers are aligned, stacked and arranged in such a way as to create a juxtaposed edge to an array of pedestrian streets. The visual diversity of the precinct is created through their rainbow exteriors of the containers and the unique interior decors of each occupant. Such interest in the built form is matched by equal richness.
in the adjoining open-spaces through colour, texture, furnishings and the composition of vegetation, planter boxes and surface material [Fig. 8.02]. A once vacant and exposed block of land has transformed into a reclusive network of small streets – offering an intimate spatial experience in contrast to the desolate surroundings of the cordoned CBD. Both built form and open space operate symbiotically in this infill project to create an inviting, and most importantly, a comprehensive streetscape.

This development signifies a new beginning for the quake-damaged CBD and is the first step in an innovative solution to utilise vacant land in a creative manner until the more permanent features of the Central City Plan come into play. “This is an important step in re-opening the CBD red zone to residents and retailers alike, and gives more certainty to people as they look to the future of this great city.” The project is a showcase for how temporary structures and landscapes can successfully revitalise spaces of neglect, damage or vacancy. Where temporary container accommodation has proved successful in reigniting a former pedestrian street of an inner city location, the use of temporary installations within streets of a residential nature can have an equally revitalising effect, as we have seen within the explorations of my thesis.

In addition to the artifact generator, which advocates for the adaptability of inhabitable structures, the infrastructure generator is also of particular relevance to the notion of resilient cities. An alarming issue faced in the aftermath of the Christchurch earthquakes has been the damage received to underground infrastructure, such as pipes and cables, which has resulted in huge numbers of residences losing access to electricity and water. Not only does the placement of infrastructure below ground increase its susceptibility to damage in such events but of even greater concern is the inherent difficulty in accessing these structures for repair and replacement. The infrastructure generator suggests how utilities within streets can be deployed in ways that are guided by robustness. By exposing urban infrastructure above ground, rather than concealing below, not only are such networks more resilient to disaster damage but they add further components to the streetscape, in turn creating new spaces to be activated in fresh ways.

streetscape visions

08 future streetscapes
“copyrighted image”
As evoked in an early chapter of this thesis - which urban form best delivers environmental protection while promoting economic, social and cultural sustainability? Urban development, in particular its pattern of settlement, will continue to be debated with more urgency than ever as a global awareness of environmental sustainability becomes an increasing political priority. What will also continue to feature in these debates is the issue of suburban sprawl and its unsustainable pattern. Within New Zealand there is a widening division between what environmental theorists advice as the preferred growth option (compact cities) and the type of housing that market forces are actually supplying.28 As Jo Ross, of the Massey University School of People, Environment and Planning, told the Manawatu Standard, "A little more than one in ten Kiwis like the idea of living in a central house or apartment."29 If it’s not the traditional quarter-acre plot of land in the suburbs that New Zealanders are seeking, then the rest would like to dabble in peri-rural living by opting for a lifestyle block.

Parallel to this issue of growth is the question of design, and how to design for alternative measures of development. My thesis amplifies the important role of the street as a foci of suburban settlement and hence community life. Creative solutions for streetscape design have huge potential to combat the ‘waste space’ by-product of suburban sprawl and enrich community living. As explored within the design principle of the infrastructure generator, waste areas are referred to as “urban space free from explicit definition and intentional design.”30

Such ‘waste space’ found within the suburban environment is predominately located in its streets. Typically, suburban streets are unnecessarily and wastefully wide. Faced with a swiftly growing global population and consequently, increasing demand for inhabitable land, wasted space is simply not acceptable under notions of sustainable development. Evidence of the mitigating measures street design can impose on such space can be found in select community pockets of international cities. Hampstead Road of West End, Brisbane is one such pocket where a retrofitted design by John Mongard Landscape Architects has aspired to reduce the former footprint of the street by 60%.31 [Fig. 8.03]. Mongard’s design generates the
reclamation of excess road asphalt and the transformation of this waste space into a succession of parklands, trees and open spaces, and he remarks that “Hampstead Common could be created out of the left-over bits,”32 in turn giving the community 40% more space for social and recreational utilisation. The West End community is predicted to triple in the next five to ten years with no evidence that additional provisions for open space will be made by local and state governments.33 Mongard’s vision behind the Hampstead Common is for the creation of community led design towards sustainability. Innovative street design solutions have paved the way for this particular community pocket of the world.

The framework which initially guided the strategy and design method of this thesis stemmed from the context of residential streets of a medium-density character. However as the investigation progressed, it became apparent that the issues emerging from existing street conditions were recurrent regardless of the prescribed residential zoning and therefore could be addressed via design solutions which transcended density levels. This is reflected in the visual scenarios of Chapter 07 where the nominated contexts represent streets from differing density zones.

Many of the key principles evoked from the design generators are applicable to other street types, admittedly perhaps even more pertinent to those streets of lower density character. This is competently expressed by Wes Edwards, of Wes Edwards Consulting (Traffic and Transportation Engineering). “As density of development increases, lot sizes become smaller, but each lot still requires some form of road access. As a result the amount of road in an area tends to increase and can occupy a sizeable proportion of the land area.”34 This would suggest that street space increasingly substitutes as general open space as residential density increases, arguing the notion that street space is more important to these contexts. While this is indeed the case, the possibilities however become limited in response to the amount of public space available. Streets within low density residential zones are typically wider and attain large amounts of wasted space, predominantly in the

future research opportunities: density

the way forward

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form of road asphalt or excessively large grass berms. Therefore street design as a mitigation tool for the ‘waste space’ of these low density environments is equally as important as the value of street design for open space preservation in higher density contexts.

The aim of this thesis was to use design as a research tool to explore new streetscape scenarios within residential contexts. As explained by Peter Downton, “Design processes both use knowledge and also produce personal knowing and collective knowledge.”

A recent workshop I attended, *Good Streets, Good Places – The Lost Art of Street Design*, was a venture geared towards authorities and design professionals of the built environment and aimed at raising awareness of emerging approaches to street design. The most standout element I took away with me was one particular slide within the presentation, which struck me as an epitome of how I envisioned this thesis contributing to the public and professional domain. The slide was simple, entailing the heading “We need to find innovative new ways to design streets to prioritise people” and accompanied by an image released by the Redland City Council of Queensland, Australia [Fig. 8.04]. The image conveys a new vision for residential streets where footpaths become parks. Coined ‘Footparks,’ this new concept encourages maximum recreational use of spaces existing right outside residents’ front doors. Redland City Council opted for a graphic image of their new vision to accomplish a level of comprehension within the public realm. This example advocates for visual simulations as an effective design research tool due to its demonstrative capabilities. Likewise in this thesis, the theoretical positions of the design generators explained through text in chapter 06 are enhanced by the incorporation of visual simulations in chapter 07.
“copyrighted image"
Design operations as a research tool has been central to this thesis, where explorations and insights have been visually conveyed in the form of images and projected scenarios. As displayed by Redland City Council’s ‘Footparks’ image, visual simulations are a powerful and effective tool for communication. Researching for possible future directions via means of design is greatly exemplified by the Why Factory research institute. This independent ‘think-tank’ employs the production of models and visualisations as the fundamental method of inquiry for researching future scenarios of urban centres. Perhaps the establishment of such a research organisation could be a future possibility for New Zealand? After all, we are a nation committed to improving its design standards in light of the best in the world. As expressed by Architect Andrew Barclay, Principal and Director of Warren and Mahoney, “We can afford to take many more courageous creative risks and we will need to if practices working in New Zealand and Australia are to continue to improve towards the standards of best of the Europeans.”

36
future streetscapes Returning once again to the tragic events of the Canterbury earthquakes and the damage incurred by the city in its wake, we are forced to question prior planning practice while rethinking the way we design our cities to achieve an enduring and prosperous urban environment. As put forth by Mayor of Christchurch, Bob Parker, “Out of adversity comes an unprecedented opportunity. We are embarking on one of the most exciting projects ever presented to a community in New Zealand, perhaps the world.” The role of the street will play a crucial part in the repair and rebuild of Christchurch’s urban and residential landscape. Through imaginative and creative streetscape visions we can re-imagine neighbourhood and community life even better than before.
4 Ibid

notes

08 future streetscapes
18 ibid; p18
19 ibid; p140
23 ibid; p273
24 Ibid
25 Ibid; p283
29 [Ross, J.] as cited by Rankin, J. ibid
30 Infrastruktururbanismus Symposium (n.d) http://www.infrastruktururbanismus.de/ [August 2011]

32 Ibid; p7

33 Ibid; p6


"the drawing plays a crucial role in this iterative process of reflection and intuitive action"

Clemens Steenbergen, *Composing Landscapes* (2008, p.23)

appendix A

a sample of sketches
Smooth Space is characteristic of Sea, Steppes, Ice, Desert

Non-Formal Space
Open to residents "with Free action.
Space is occupied by Intensities"

Nomadic movement across surfaces. Migrant

Concept: Smooth Space - a foundation for the notion of temporality: Even Non-Formal Space

Imposed surface upon resilient area where the ground morphs to form swelling ripples vertically to become the facade of fluid form.
Appendix A

a sample of sketches


*references*


*references*


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