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Escaping Density: Restorative Urban Pockets

Wing Man (Mandy) Li

Thesis submitted in partial fulfilment of the requirements for Master of Architecture (Professional) degree, The University of Auckland, 2011
DEDICATION

TO MY FAMILY FOR ALL THE SUPPORT,
AND SPECIAL DEDICATION TO MY PARENTS:

謝謝爸爸媽媽給我永遠的支持.
我答應你們, 我一定會努力工作,不再讓你們為我擔憂.
ACKNOWLEDGEMENTS
THIS THESIS WOULD BE INCOMPLETE WITHOUT YOU ALL.

MY SUPERVISOR, IAN:
FOR HIS SUPPORT AND INTELLECTUAL ADVICE THROUGHOUT THE YEAR. THANK YOU FOR YOUR SUPPORT AND DEDICATION TO MY THESIS.

MY DRY BROTHER, JEMMY:
FOR WORKING WITH ME AND KEEPING ME ON TRACK WHEN I FELT MISERABLE. THANK YOU.

MY BEST FRIEND, CLARA:
FOR ENDLESS CARING AND SUPPORT THROUGHOUT ALL THESE YEARS. I COULD NOT HAVE COMPLETED THIS DEGREE WITHOUT HER. I REALLY APPRECIATE EVERYTHING SHE HAS DONE FOR ME. THANK YOU.

MY ARCHI FAMILY, CLASS OF 2011:
FOR THEIR FIVE YEARS OF SUPPORT. IT MEANS A LOT TO ME. I WOULD NEVER FORGET ABOUT OUR STUDIO LIVES, THOSE ALL-NIGHTERS BEFORE CRIT AND ENDLESS MOCKING FROM THE GUYS! THANK YOU FOR EVERYTHING.
Escaping Density: Restorative Urban Pockets examines how the insertion of communal spaces and facilities into dull, or nondescript, interstitial urban spaces can inject life and architectural completeness to the city and thereby improve the living quality of neighboring residents. It takes a systematic approach to the design problem by the use of resident surveys, precedent studies and reviews of related design theories, and is led by the critical research question—What architectural principles and ideas can we apply to urban-scapes in the Auckland CBD to relieve the tension resulting from urban density?

My proposition assesses the application of the chief finding that conviviality and contemplativeness are the two essential qualities that contribute most to providing social, psychological and architectural restoration. The selected site for development is on Eden Crescent, located in the core of Auckland Central Business District. The proposed Restorative Urban Pocket demonstrates the significance of our sensory comfort and the importance of flexible and transitioning atmospheres in creating effective user-experiences for enhancing well-being for existing urban paradigms.
## TABLE OF CONTENTS

### CONSENT FORM

### DEDICATION

### ABSTRACT i

### CONTENTS iii

### 1.0 INTRODUCTION 1

### 2.0 LITERATURE REVIEW 5

#### 2.1 INTRODUCTION TO LITERATURE REVIEW 7

#### 2.2 LITERATURE AND THEORIES 8

##### 2.2.1 THE PSYCHOLOGICAL REPERCUSSION OF THE URBAN FABRIC 8

##### 2.2.2 PHYSICAL AMENITIES THAT INFLUENCE PSYCHOLOGICAL RESPONSE 19

##### 2.2.3 DESIGN MECHANISMS TO ENSURE OCCUPANCY 25

#### 2.3 PUBLISHED PRECEDENTS 34

##### 2.3.1 POCKET PARKS 35

##### 2.3.2 THERAPEUTIC GARDEN 38

##### 2.3.3 AUCKLAND EXAMPLES 45

#### 2.4 CONCLUSION TO LITERATURE REVIEW 51

### 3.0 METHODOLOGY 53
APPENDICES

APPENDIX A- ANALYSIS AND SELECTION OF AUCKLAND PRECEDENT EXAMPLES

APPENDIX B- TOP 3 POTENTIAL SITE FOR DESIGN DEVELOPMENT

APPENDIX C- QUESTIONNAIRE

APPENDIX D- RESIDENTS FLYERS FOR PARTICIPATION IN QUESTIONNAIRE

APPENDIX E- INITIAL POSSIBLE PROGRAMME LIST

APPENDIX F- DESIGN SKETCHES

APPENDIX G- FINAL CRIT PRESENTATION_28OCT2011
LIST OF FIGURES

2. Flow diagram of existing urban problem (Own generation) p3
3. Diagram of the six main principles to a Restorative Urban Pocket (Own photograph, 2011) p4
4. Icons representing our 5 traditional senses (http://www.thesensorycompany.co.uk/Pics/SensoryLogo.jpg) p10
5. Distance of Perception (Gehl, 2010) p11
6. Angle of Comfortable Perception (Gehl, 2010) p11
7. Examples of Distinct Contrast between Light and Dark (http://cdnimg.visualizeus.com/thumbs/f3/61/architecture,black,and,white,desolate,light,and,dark,shadows-f3619c372f73fa7cabeaf30fd1003d6b_m.jpg) p13
8. Example of Trellises-Southbank, Brisbane (Own photograph, 2011) p14
9. Example of Trellises-Southbank, Brisbane (Own photograph, 2011) p14
10. Example of Trellises-High Courts, Auckland (Own photograph, 2011) p14
12. Example of Greenery Between Buildings (Futurarc, 2011) p15
13. City Apartments, Auckland Central (Own photograph, 2011) p15
14. Library-Southbank, Brisbane (Own photograph, 2011) p15
16. Example of Water Feature, Britomart Place (Own photograph, 2011) p16
17. Example of Water Feature-Southbank, Brisbane (Own photograph, 2011) p16
LIST OF FIGURES

18. The Six Urban Design Goals for the City (Own photograph, 2011) p17
19. Auckland’s Laid Back Atmosphere (Own photograph, 2011) p18
20. Auckland’s Laid Back Atmosphere (Own photograph, 2011) p18
21. Example of high rise structure vs low rise buildings (Gehl, 2010) p20
22. Examples of buildings and space vs human scale (Gehl, 2010) p20
23. Example of outdoor market activity (Own photograph, 2011) p22
24. Popularity of Outdoor Seating (Gehl, 2010)
25. Example of Outdoor seating (Gehl, 2010)
27. Example of Vibrant Lighting-Proposal for Hong Kong Development (Retrieved www.archdaily.com) p26
28. Example of grounding lighting in urban space (Own photograph, 2011) p26
29. Example of ground lighting in urban space under shelter (Own photograph, 2011) p26
30. Olgyay’s Bioclimatic Diagram for Protection Against Climatic Discomfort (Bokalders & Block, 2010; Erell, Pearlmutter, & Williamson, 2011) p27
31. Climatic Adapted Building from Warm to Cold (Bokalders & Block, 2010; Erell, Pearlmutter, & Williamson, 2011) p27
32. Example of Tensile Shelter (Own photograph, 2011) p28
33. Example of Tensile Shelter (Own photograph, 2011) p28
34. Example of Rigid Shelter and Communal Stage for Performances (Own photograph, 2011) p28
35. Examples of Rigid Shelter (Own photograph, 2011) p28
LIST OF FIGURES

36. Example of a Combination of Shelter Including Flexible and Rigid (Own photograph, 2011) p28
37. Example of Contemporary Shelter (Futurarc, 2011) p30
38. Example of Shelter- Light and Airy Construction (Futurarc, 2011) p30
39. Example of Shelter and Rain Water Collection System (Futurarc, 2011) p31
40. Example of Flexible Shelter to Adapt for changing weather and needs (Retrieved www.archdaily.com) p31
41. Mechanism for rain protection (Cullen, 1961)p32
42. Diagram showing effect of solid vs porous barrier against wind (Bokalders & Block, 2010; Erell, Pearlmutter, & Williamson, 2011) p33
43. Paley Park-Relaxing atmosphere enhanced by nature (PPS, n.d) p 36
44. Paley Park- Flexible seating allows user to personalize own space (PPS, n.d) p36
45. Therapeutic Garden at Alnarp-Plan of the Garden Outlining the Main Spaces (Aspinall, 2010) p39
46. The Wildlife Garden Room at Alnarp (Aspinall, 2010) p42
47. The Grove Garden at Alnarp (Aspinall, 2010) p42
49. The Traditional Garden Room at Alnarp (Aspinall, 2010) p42
50. Preference for the sun (Own photograph) p45
51. Shaded Path is unoccupied (Own photograph) p45
52. Examples of urban seating (Own photograph) p45
53. Example of water feature attracting wildlife, demonstrates aspects of biodiversity (Own photograph) p45
54. Proposed scheme at Wynyard Quarter –Demonstrates outdoor activities and aspects of conviviality (Own photograph) p47
LIST OF FIGURES

55. Proposed scheme at Wynyard Quarter-Demonstrates outdoor activities, enhanced by trees (Own photograph) p47
56. Example of water feature (Own photograph) p48
57. Examples of Plantation (Own photograph) p48
58. Shaded areas left unoccupied (Own photograph) p48
59. Preference of outdoor seating and the sun (Own photograph) p48
60. Example of terrace seating (Own photograph) p48
61. Example of flexible seating (Own photograph) p48
62. Example of music/art in urban environment (Own photograph) p49
63. Example of outdoor activity-Playground (Own photograph) p49
64. Flow diagram to conclude findings of Precedent studies (Own generation) p50
65. Flow diagram to conclude findings of literature review-the requirement of spaces (Own generation) p51
66. Methodology flow diagram (Own generation) p54
67. Site Selection Methodology (Own generation) p57
68. Site plan of Auckland CBD outlining potential site for development (Own generation) p58
69. Context of Auckland CBD showing the grid reference street layout (Own generation) p60
70. Context of Auckland CBD showing the central node focus (Own generation) p60
71. Street layout of the block showing organic movement (Own generation) p61
72. Entry from Eden Crescent (Own photograph) p62
73. Entry from Law Car Park (Own photograph) p62
74. Entry from Parliament Street (Own photograph) p62
75. Photograph of site model showing contour and surrounding physical properties (Own photograph) p63
76. Identifying site and zoning of surrounding buildings (Own generation) p64
77. Initial sun analysis of the site (Own generation) p65
78. Connection to site between neighbouring properties and entrances (Own generation) p66
79. Sketches of connections between neighbouring properties (Own generation) p67
80. Selected apartments for Site Survey (Own generation) p68
81. Graph: Age group of survey participants (Own generation) p71
82. Graph: Why are you living (Or did you live) at your location? (Own generation) p71
83. Graph: Satisfaction towards existing environment (Own generation) p72
84. Graph: How are you unsatisfied with your living environment? (Own generation) p73
85. Graph: What do you think of the green spaces around your immediate environment? (Own generation) p73
86. Graph: Feeling of safety towards existing environment (Own generation) p74
87. Graph: How safe do you feel in your surrounding (Own generation) p75
88. Graph: Is there any time of the day or season of the year that discourage use of the space? (Own generation) 75
89. Graph: Preference of individual vs social activities (Own generation) p76
90. Graph: What activities do you enjoy doing in your leisure time that makes you feel joyful and relaxed? (Own generation) p77
91. Flow diagram showing formation of design proposition (Own generation) p84
92. Main perspective showing overview of the design (Own generation) p86
93. Site plan of design proposition highlighting the main spaces: Convivial and Contemplative (Own generation) p87
94. Site plan of design proposition outlining main programmes (Own generation) p88
95. Site plan of roof top, planes converge to towards CBD central node (Own generation) p92
96. Simplified Section A-A outlining organic flow pattern (Own generation) p93
97. Proposed Entry from Law Car park (Own generation) p94
98. Proposed Entry from Parliament Street (Own generation) p94
99. Circulation route through site (Own generation) p94
100. Formation of Transitional Zone (Own generation) p95
101. Components to creating a Restorative Urban Pocket (Own generation) p96
102. Diagram showing the atmosphere at each section (Own generation) p99
103. Level of Intensity diagram showing the increase of conviviality (Own generation) p99
104. Section D-D, showing transitional zone between neighbouring properties (Own generation) p100
105. Transitional zone at Westminster Court (Own generation) p101
106. Transitional zone at Windsor Tower (Own generation) p101
107. Separation of private and public parking designated lift for each party (Own generation) p102
LIST OF FIGURES

108. Line of Serial progression (Own generation) p103
109. Section A-A, overview of design proposition (Own generation) p104-105
110. Section C-C, view towards convivial space (Own generation) p106
111. Render of The Restaurant demonstrating Convivial Activites (Own generation) p 108-109
112. Floor plan of The Restaurant (Own generation) p110
113. Sketches of The Restaurant- Revolving walls and colour of timber, walls form a jagged layout when rotated (Own generation) p110
114. Angle of perception from stage to cinema (Own generation) p111
115. Angle of perception from terrace seating to stage (Own generation) p111
116. Render of Southern Communal Space (Ground) demonstrating market activites (Own generation) p113
117. Render of Southern Communal Space (On Shelter Covering) demonstrating outdoor cinema with a vibrant atmosphere created by colourful lighting (Own generation) p115
118. Section B-B, view towards Contemplative Space (Own generation) p116
119. Sketches of The Complex- Development of the jagged form from top level block and extensions (Own generation) p117
120. Roof Design of The complex-Allowing ventilation and daylight penetration, but rejecting rain (Own generation) p118
121. Floor plan of The Complex_Level 2 (Own generation) p119
122. Floor plan of The Complex_Level G (Own generation) p119
123. Floor plan of The Complex_UG1 (Own generation) p120
124. Floor plan of The Complex_UG2 (Own generation) p120
125. Render of Gallery Space (Own generation) p121
LIST OF FIGURES

126. Preliminary sketches of The Trellis Garden (Own generation) p122
127. Render of The Trellis Garden (Own generation) p123
128. Diagram of The Restaurant showing flexibility of rotatable walls adaptable for summer and winter use (Own generation) p126
129. Diagram showing the protection for cool weather, protection of heaters and plantations (Own generation) p127
130. Sun study of the design proposition. Analysis of shaded areas in attempt to increase daylight penetration (Own generation) p128
131. Increase daylight penetration by aid of water feature (Own generation) p131
132. Diagram of the water wall system (Own generation) p131
133. Shelter Covering derived from main circulation route and green spaces (Own generation) p134
134. Aromatherapy plants (Anitei, 2008) p135
135. Structural component of Shelter Covering (Own generation) p135
136. Materials palette for design. Uses a combination of sensory and functional materials (Own generation) p136
137. Sketch showing material use, merging with existing materials palette
1.0

INTRODUCTION
The aim of this thesis is to investigate how communal spaces and facilities can be inserted into highly built-up urban areas to restore well-being for users. The opening to my research was informed by a hunch feeling of personal experience in the urban realm. One of the major concerns for urbanisation is the problem of density. Significant growth in cities results in over-crowding through poor urban planning strategies. The problem of space deprivation induces a tense atmosphere and consequently decreases our well-being (Gehl, 2010). Most people now live in urban areas for the first time in history (Gehl, 2010 and Pearlmutter & Williamson, 2011) which means more people around the world may suffer from issues that persist with urban density. Although Auckland has long been recognised as one of the most beautiful and spacious cities in the world, its increase in density is obvious in certain locations on the urban profile. There seems to be an inclination towards a dense arrangement in the near future, corresponding to other cities. We should re-organise the urban fabric to prepare for undesirable conditions of urban lifestyle. The question is, how can we create a better living within the existing density to resolve the problem of well-being?

The critical question is what architectural principles and ideas can be applied to urban-scapes in the Auckland CBD to relieve the tension resulting from urban density? The paucity of appropriate spaces and facilities appears to be the key factor in relieving such tension. My hypothesis is that, by insertion of Restorative Urban Pockets through the existing potential urban-scape, we can effectively improve well-being and enhance the living experiences for urban users. The research question and my hypothesis became the driving force to the whole design.
The objective of creating a Restorative Urban Pocket will explore the extent that expressions of conviviality and contemplativeness can be harnessed to aid restoration and reduce tension in urban areas; and will examine those principles by designing a communal hub within a potential site in Auckland CBD. Attempts to restore well-being will be by experiencing the integration of two contrasting atmospheres: Convivial and Contemplative. The design has been shaped by our physical and psychological needs of the urban environment. Each of the ideas explored has a positive response to the human mind from both objective and subjective analysis.

This thesis is presented in four parts, commencing with a Literature Review (Chapter 2.0) that establishes the major source of information supported by precedent principles and examples. Chapter 3.0 is a short summary on Methodology which is followed by a discussion of the relevant data collected through a Site Analysis and Resident Survey (Chapter 4.0). The next part is a comprehensive proposal of the Design Proposition (Chapter 5.0) that evaluates the application of the precedent findings for communal urban spaces for restoration. Chapter 6.0 concludes the design, assesses the weight of the proposition theories and suggests areas for future research.

Figure 3: Diagram of the six main principles to a Restorative Urban Pocket
LITERATURE REVIEW

2.1 INTRODUCTION TO LITERATURE REVIEW
2.2 LITERATURE AND THEORIES
2.3 PUBLISHED PRECEDENTS
2.4 CONCLUSION TO LITERATURE REVIEW
2.1
INTRODUCTION TO LITERATURE REVIEW

In regard to the critical question and objectives, the literature design notes attempt to identify principles and theories that shape the proposal of Restorative Urban Pockets. The researched categories contain essential components to understanding the ideas behind restoring well-being by acknowledging human psychological needs and how this can be applied to current architectural practice and theories. To confine the focus of the literature, contents were limited and only covered relevant information regarding urban context and tension atmosphere. Three categories have been explored to address the issues of urban density in relationship to well-being:

2.1.1 The Psychological Repercussion of the Urban Fabric;
2.1.2 The Physical Amenities that Influence Psychological Response, and
2.1.3 Design Mechanisms to Ensure Occupancy
2.2 LITERATURE AND THEORIES

2.2.1 THE PSYCHOLOGICAL REPERCUSSION OF THE URBAN FABRIC

The layout of certain spaces and the atmosphere it creates trigger our psychological thoughts. To understand how people feel, we must appreciate the nature of our senses and how they interact with the outside world. This chapter focuses on:

A. The Human Senses,

B. The Positive Effect of Nature and

C. Cultural References.
A. THE HUMAN SENSES

The most direct and basic element inherited biologically are our senses. Architecture not only deals with the built form, but also how we feel inside these spaces, and how our senses react to our surroundings should be well examined. "Architecture has given life and spirit to all the qualities that touch the human senses and the human soul" (Clements-Croome, 2004, p.62). From long ago, there has always been a close relationship between our bodies and the environment. It is from the body as a center that we orient ourselves with the outside world (Clements-Croome, 2004; Pallassma, 2005; Jencks & Kropf, 1997). “The natural starting point for the work of designing cities for people is human mobility and the human senses because they provide the biological basis for activities, behaviour and communications in city space” (Gehl, 2010, p.33).

Pallassma identified that the inhumanity of architecture is caused by the disparity of the senses. In Western culture, vision has been over-ranked and expressed. However perception does not create a full human experience; instead, it is like a still image lacking plasticity and fooling our eyes (Holl, Pallassma, & Perez Gomez, 2006). “The inhumanity of contemporary architecture and cities can be understood as the consequence of an imbalance in our sensory system.” Architecture that equally expresses all the senses truly exerts a full multi-sensory experience.

“The space in the middle, between the colonnades and open to the sky, ought to be embellished with green things; for walking in the open air is very healthy, particularly for the eyes, since the refined air that comes from green things, finding its way in because of the physical exercise, gives a clean-cut image…” Vitruvius, book 5, chapter 10, paragraph 5.
TO ENABLE A RESTORATIVE SETTING FROM OUR INNER BEHAVIOUR, WE MUST CONSIDER THE FIVE SENSES:

- VISION
- HEARING
- TASTE
- TOUCH
- SMELL

Figure 4: Icons representing our 5 traditional senses
Vision

Many theories claim that most information about our surroundings is conceived through the eyes. (Gehl, 2010; Clements-Croome, 2004). (Holl, Pallasma, & Perez Gomez, 2006). Gehl (2010) identified two important thresholds (figure 5). At 100m, we start to visualise people in motion. We can sense the atmosphere, but cannot identify details. At 25m, we are able to observe the expressions of people. Our sense of vision enables comfortable perception at 50-55 degrees above and 70-80 degrees below eye level as shown on figure 6. Our sense of vision has developed our horizontal motion as the most ideal gesture. Perception of angle and distances allows communal or private spaces to be created. The Hidden Dimension by Edward T Hall (Hall, 1966) identifies the four distances with people interaction being:

Intimate distance; 0-45cm; Personal distance; 45-120cm; Social distance; 120-370cm, and public distance 370cm+. This gives a good value in the placement of public facilities and how comfortable people feel in a given space. These measurements are useful guidelines in arranging individual and social distances.

Our eyes like to see beautiful things. It makes us happy and gives a sense of pleasure. “Possibilities for variations in volume, scale, materials etc., are required for an aesthetic and stimulating environment. An unambiguous and boring environment underestimates our brains, which is downright harmful for psychological health.” (Gehl, 2010, p.660) Paths should be broken up into sections, facades should be vertical and views should be interesting for people to become excited in the walking experience (Gehl, 2010).
Sound

In the natural environment, sound is usually an unconscious experience and enhances our feelings of comfort. Sounds affect our mood and the way we think (Bokalders & Block, 2010; Holl, Pallasma, & Perez Gomez, 2006; Jencks & Kropf, 1997). Modern materials inhibit to reveal the true architectural dimension of sound (Holl, Pallasma, & Perez Gomez, 2006; Jencks & Kropf, 1997). At 25-25m, short messages can be exchanged with slight difficulty, until within 7m people are able to carry out conversations. Some sounds can be pleasant such as music that evokes good memories, while the livelihood of the citiescape such as machinery or vehicles can become annoying.

We can define social hubs for either individual or communal use according to the visual and sound measures. Some people feel more restored for well-being when they interact with others, while others need the sense of contemplation. “It is extremely important to retain your own personal space to help keep calm and act as a shield against the negativity and stressful life” (Norman, 2009, p.1).

Smell and Taste

Some odours can enhance an environment and attract people by arousing our biological needs. The scent of a flower reminds us of our intimate relationship with nature (Bokalders, 2010; Clements-Croome, 2004; Thompson & Travlou, 2007; Bell & Thompson, 2010) or the food from next door reminds us of our energy source.
Touch enhances our perception. It can read the surrounding in a 3D form (Clements-Croome, 2004; Holl, Pallassma, & Perez Gomez, 2006; Jencks & Kropf, 1997). Charles Moore and Pallassma believe that all other senses are extensions of touch. “Texture has the ability to carry experience into any architectural space” (Chibnall, 1982, p38). The contrast of light and dark would create distinctive texture and enhance a sense of touch (Mistry, 2009). Colour and its properties are perceived quickly and affect people psychologically. “The scale, the surface texture, the light content, the sounds quality, the furnishing and the colors all play their part in characterizing the space in the mind of the occupants” (Clements-Croome, 2004, p.66).

Birren (1950) has justified colour preferences for different social groups. People who are well adapted to the world like colours in general and warm colours in particular. In contrast, cool colours (and not much enthusiasm towards them) tend to be favoured by people who are dislocated from the environment. Warm, active colours are exciting qualities of red and related hues, while cool, passive colours are calming qualities of blue, violet and green. Light colours are induced as active and deep colours as passive.
Figure 8: Example of Trellises-Southbank, Brisbane.

Figure 9: Example of Trellises-Southbank, Brisbane.

Figure 10: Example of Trellises-High Courts, Auckland.

Figure 11: Greenery extension from building exterior. Presumably climbers will be fully grown to form a shelter with minimal daylight penetration - Japan.
B. THE POSITIVE EFFECT OF NATURE

The idea that humans rely on nature has always been a convincing principle. “Humans have an inbuilt need for natural scenery and particular aspects of items specifically: water, trees, flowers, sunlight and earth. This is as true for those in the best of health as it is for patients recovering from illness and surgery” (Aspinall, Bell & Thompson, 2010, p100). Nature has the ability to decrease stress levels and reduces our tension, to become more relaxed (Norman, 2009; Thompson & Travlou, 2007; Bell & Thompson, 2010).

The most effective natural feature is greenery. They enhance our well-being in every aspect. The parks act as an escape and relief area from the stressful city, while enhancing the quality of living (Koh & Beck). A simple start is to maximise visual contact with green items. Planting along frequented routes promotes attractive paths. A study from Korpela and Ylen 2007 (Thompson & Travlou, 2007) showed that stress can be decreased by exposure to quiet green spaces. AAT hypothesis (Ulrich, 1993) claims, “Stress reduction should decrease in a restorative setting, suggesting the healing effect of nature as a matter of unconscious process, effects, located in the oldest, emotion-driven parts of the brain.” However, those who do suffer from such illnesses did not show an increased engagement with greenery. By making contact with Nature, it involves the person’s own thoughts, feelings, senses and physicality. Figures 8-14 shows examples of how nature can be implemented to existing buildings and urban spaces. In particular, vertical greeneries reduces the need for ground space.
Therapeutic gardens were experimental places merging horticultural therapy and natural restoration. Plants in general activate our smell and taste senses while therapeutic gardens and plants are more effective and specific for certain restoration. New Zealand produces a variety of local fruits and vegetables each year. Asparagus, potatoes, corn and a range of berries are available at the beginning of the year. Cherries, peaches, Braeburn apples and kiwifruit come last (Palffy, 2008). Localised materials are easier to harvest and adhere to the cultural aspect.

Water is another effective tool to enhance a space. While the natural aspect of water reminds us of our origins, its physical properties help to control the climatic conditions within a space. (Refer to Chapter 2.2.3) Figure 15-17 are examples of water feature that can be implemented to urban-scapes.
C. CULTURAL REFERENCES

Most of the principles proposed are universally suited for human senses; however each social group is uniquely shaped by the society. It is necessary to consider culture and history to fully amalgamate architecture and place. Figure 18 shows the important history and cultural features of Auckland City’s development. Designing with the context reduces environmental stress and retain the distinctive features of the city.

Within the six distinctive principles, being sustainable, beautiful and human applies to my critical question.

- Being Sustainable
  - To create green and ecological corridors, and to enhance biodiversity

- Being beautiful
  - Aesthetic appearance should attain to existing material and form in response to local and historical contexts for the surrounding.

- Being human
  - Ability to feel safe and welcomed. Location for night time economies to encourage activities after office hours.
  - Opportunities for market, event spaces.
  - Development with a human scale and encouraging social interaction (Refer to next chapter on Human Scale).
Auckland characterises a relaxing atmosphere and a laid-back attitude (Goddard, 2005). The city’s redevelopment of the waterfront and tourist destination created a busy atmosphere with bars and restaurants open throughout the night (Brunn, Williams & Zeigler, 2003). As Auckland lies on an isthmus, outdoor activities such as beach pursuits, fishing, boating and water activities have long been a summer family tradition. New Zealand is famous for its natural wonderland (Palffy, 2008). An outdoor lifestyle implies the desire for summer months and related activities.
2.2.2 THE PHYSICAL AMENITIES THAT INFLUENCE PSYCHOLOGICAL RESPONSE

Our feeling of comfort in a certain space is given by psychological response, but how we enable and apply this atmosphere into architecture has to do with the physical features and built forms. How one feels in a space is rather subjective, but theories and principles have been proposed in an attempt to underline the principles of the ‘ideal urban space’. This chapter focuses on site dimension and facilities for our well-being.

A. The Human Scale

B. Size and Shape and

C. Active and Sensory Recreation.
A. THE HUMAN SCALE

Contemporary designers and architects often neglect buildings at human scale and to our senses. Through Jan Gehl’s-Cities for People, he justified that the more deficient cities around the world disregard the human dimension. Technologies stimulate high rise fabrication, placing low priorities and emphasis to build for human and therefore cannot achieve feasible spaces. “Homo sapiens are linear, frontal, horizontally orientated, upright mammals” (Gehl, 2010, p.33). The gap between super-structural architecture and human size is in fact inappropriate for small human users.

“The challenge is to build splendid cities at eye height with tall buildings rising above the beautiful lower stories.” (Gehl, 2010, p.59) This would suggest the need for a subtle change of level in the transition of spaces. In support of Gehl’s principle, one of the ideas behind Purves’s- Persistence of Formal Patterns is serial progression. Serial progression characterises the experience for linear spaces, implying the notion of growth from one end to another by physical and design qualities. (Purves, 2004, p.154). Figures 21 shows the contrast between high rise and low rise; figure 22 shows two examples of inappropriate human scale development, both figures demonstrate the unpleasantness of the city-scape.
B. SIZE AND SHAPE

Very large public squares (100+ meters, 10,000 sq.m.) are ideal to gather large numbers of people for activities such as big events. It inspires spaciousness and awe but does not correspond to the proportion of human scale. Small public spaces such as some pocket parks (Blake, n.d) can maintain the cozy feeling, but may also cause a claustrophobic feeling, which is stress-inducing rather than relaxing (Shaftoe, 2008). Small spaces limit activities, uses and functions. Good public spaces tend to be small to medium size where there is sufficient space for facilities and they are easier to manage and perceive. The optimum dimension (Lynch, 1971; Alexander 1977; Gehl, 2010) for facial recognition is about 20-25m on each side. This guideline is important when selecting a site for possible development or to recreate the dimension of the space.

Well-planned urban spaces usually consist of a few areas (Shaftoe, 2008) that allow good openings and are well connected, as contrasted with one big open space that immediately gives an overall perception of the entire space. We can separate different activity uses since “Curves and bends offer intriguing options, like something is around the corner” (Cullen, 1961, p.56). The following spaces should be revealing sequentially. Levelling and overlapping allows separation of spaces and provides the ‘intriguing options’ as Cullen stated. Natural levelling is given by typography, but it appears that, provided the changes are not too steep, people enjoy the subtle differences of slopes and tiers (Shaftoe, 2008).

In contradiction to the above statement, Gehl explained that people prefer the ability to visualise the entire site. A sense of security can be achieved when the environment becomes familiar to the user. The focus of Cullen’s theory seems to be intriguing aesthetic qualities which can be rather subjective, while Gehl’s principle appears to cover a wider perspective of general human behaviour.
C. ACTIVE AND SENSORY RECREATION

Engaging with an active lifestyle seems to enhance well-being. The World Health Organisation recognises inactivity as one of the key contributors to the global burden of ill health (World Health Organisation, 2011). Physical exercise has been an effective method of regulating one’s health, both physically and mentally. “Healthy exercise is one of the finest stress relievers.” (Dallmann, 1998, p.145) The forcing of muscular tissue releases unresolved stress, thereby improving oxygenation and circulation. Gardening is another activity that enables good physical and mental health. A combination of active work and the natural environment triggers all of our senses to relax. Quiet restoration times help with relaxation, but an active lifestyle also shows an improvement in mental health (Gehl, 2010).

Restaurants and cafés have the ability to evoke our senses and act as a relaxing implement. The smell and taste of the food attracts people. These places provide a spot to encourage social cohesion. Coffee breaks are considered to be a recreation and a time of pleasure. We realise that people tend to stay longer than necessary for consuming their cup of coffee. While some people consume coffee to decrease stress, the social engagement with friends and family also acts as a relieving tool. Sidewalk cafes or restaurants with outdoor seating allow users to experience nature and to support natural surveillance (Figure 24). Art and music are leisure activities that unconsciously induce our relaxation through sensory play. Slow paced music helps one to cope with stress, while fast tempo music gives us energy (Page, n.d). Pictorial art can stimulate our visual sense and music can stimulate our sense of hearing. Both activities can produce positive effects with minimal limitations as to age, gender or racial differences.
D. MATERIALS

As mentioned before, material has the ability to evoke our senses. The rich texture and history of traditional materials seem to have an advantage over modern materials. Natural materials convey age, history and story of origins, but contemporary materials aim at ageless perfection. New technological materials such as glass, metal, synthetic plastic do not convey such properties. Buildings utilising modern ageless materials do not reveal their true qualities implying their fear of death (Holl, Pallasma, & Perez Gomez, 2006; Pallasma, 2005). We should recognise materials age, history, and relationship with human to understand their values and advantages.

Table 1 shows the sensory input and basic physical properties for commonly used materials. All of the traditional materials seems to convey more properties that applies to our sensory comfort. In particular, timber and concrete seems to be an appropriate choice. Timber, like the other traditional materials displays sensory characteristics while adheres to the notion of nature. In coherency with buildings in Auckland CBD, many of them are concrete based. Figure 26 is an example of timber and concrete architecture.

Figure 26: Inspirational architecture showing material use of timber, concrete and glazing- Ballymahon
Table 1: Physical properties and sensory influence of common materials (Clements-Croome, 2004; Pullassma, 2005)

<table>
<thead>
<tr>
<th>Material</th>
<th>Traditional/Modern</th>
<th>Sensory influence of physical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stone</td>
<td>Traditional</td>
<td>Solid Material, Gives out dark and solid feeling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Natural texture allows eye to penetrate surface</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thermal mass</td>
</tr>
<tr>
<td>Marble</td>
<td>Traditional</td>
<td>Solid Material, Gives out dark and solid feeling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Natural texture allows eye to penetrate surface</td>
</tr>
<tr>
<td>Brick</td>
<td>Traditional</td>
<td>Solid Material, Gives out dark and solid feeling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Natural texture allows eye to penetrate surface</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thermal mass</td>
</tr>
<tr>
<td>Timber</td>
<td>Traditional</td>
<td>Reminds us of nature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responds to the vibration of sound</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Natural texture allows eye to penetrate surface</td>
</tr>
<tr>
<td>Concrete</td>
<td>Modern</td>
<td>Solid Material, Gives out dark and solid feeling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thermal mass</td>
</tr>
<tr>
<td>Steel</td>
<td>Modern</td>
<td>Strong and flexible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Can withstand heavy weight</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evoke cold feelings</td>
</tr>
<tr>
<td>Glazing</td>
<td>Modern</td>
<td>Sense of transparency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engagement with the outside world</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Immateriality and weightlessness</td>
</tr>
<tr>
<td>Reflective Glass</td>
<td>Modern</td>
<td>Area appears more spacious</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reinforces unreality, fooling the eyes</td>
</tr>
</tbody>
</table>
2.2.3 DESIGN MECHANISMS TO ENSURE OCCUPANCY

Previous chapters discussed the qualities to restoring well-being, but we must ensure that people are willing to use the space for the design to be effective. This chapter discusses the two main conditions that stresses users for occupancy.

A. Safety and Security for Night Use, and
B. Protection from the Ever-changing Weather.
A. SAFETY AND SECURITY

Engaging with the outdoor environment is about creating a sense of belonging with one’s area and the people around you. Being outside allows people to experience Nature, to perceive the life of the cityscape and to encourage natural surveillance against crime. Consideration for neighbouring properties must be given within an urban development. Clearly separated public and private zones reinforce a sense of affiliation and security. Areas of transition help to define the boundaries. Transition zones strengthen the idea of serial progression and subtle changes from public to private (Purves, 2004; Gehl, 2010).

In the Residents Survey (Chapter 4.2.3), a majority of the participants said that night use was most discouraging. During the night when most people are back at home, lighting is essential to provide a sense of vision, which also creates an aesthetic appearance at night. “Lighting in city space has great impact on orientation, security and visual quality in the dark” (Gehl, 2010, p.269). Different colours of lighting affect the mood and atmosphere of the space (Figure 27-29 shows examples of lighting in urban spaces, in particular, figure 27 enhances the vibrant atmosphere). Encouraging night activities such as twenty-four hour retail or communal gatherings allow natural surveillance for crime reduction. While some activities may not be suitable to run overnight, several different programmes should alternate on the same space at different times to keep the area active.
B. PROTECTION FOR THE EVER-CHANGING WEATHER

(Council A, 2011; Bokalders & Block, 2010; Erell, Pearlmutter, & Williamson, 2011)

Well-designed and facilitated spaces may still be left unoccupied in undesirable weather. It is therefore important to achieve a design responsive to the four seasons of the year and changing climates of the day. Modern architecture and material use tends to neglect the climate as a consideration (Bokalders & Block, 2010). Figure 31 shows the various shapes of buildings that are suitable for different climates. A reduced outer surface area helps to keep the space warm. For a moderate climate like Auckland, it is still essential to protect the space against heat and the sun during summer, the cold during winter and rain and wind that persist all year round. “Building a moderate climate helps to keep the body healthy and enhance wellbeing” (Clements-Croome, 2004, p.27). Figure 30 is Olgyay’s bioclimatic diagram, indicating the protections needed for different climates. The different choice of materials has great impact on the microclimate. Materials affect the temperature of the surrounding surface, which affects people’s experience of warmth and comfort. Colour, humidity, conductivity and mass affect the temperature it radiates (Bokalders & Block, 2010; Erell, Pearlmutter, & Williamson, 2011).
LITERATURE REVIEW

Figure 30: Example of tensile shelter - Brisbane

Figure 31: Example of tensile shelter - Brisbane

Figure 32: Example of rigid shelter and communal stage for performances - Brisbane

Figure 33: Example of rigid shelter - Brisbane

Figure 34: Example of a combination of shelter including flexible and rigid, and trees - Brisbane
Protection from the Heat:

*Over 24°C on average in an Auckland summer*

- Overhangs, colonnades, awnings and trellises: Creates shade around the building. Regarded as a better shading device than trees because fixed physical properties allow accurate angles of shading (Figure 32-40 shows the different types of shading devices).
- Deciduous trees: Provides shelter from the sun’s rays but permits sunlight when trees lose their foliage during winter.
- Fountains: Humidifies the air and evaporation cools the surrounding atmosphere.
- Vegetation: Makes a place feel cooler if the grass and vegetation are more irrigated. Similar to the idea of fountains.
Figure 35: Example of contemporary shelter, enhanced by nature. Dispersal of soft daylight beautify the space.

Figure 36: Example of shelter- light and airy construction. Only semi covered creating a contrast between light and dark.
Figure 37: Example of shelter and rainwater collection system. Daylight penetration is permitted through openings creating contrast between light and dark.

Figure 38: Example of flexible shelter to adapt for changing weather and needs.
Protection from rain

- Overhangs and shelter: Create shade around the building. Figure 41 shows different mechanisms for rain protection.
- Solid materials such as tensile structures that cover big open spaces or individually erected shading across open space.

Protection from the cold during winter:

16°C on average in an Auckland winter

- Building arrangement: Should achieve a gradual height increase from north to south for sun penetration.
- Building bulk should be shallow, multiple stories or with a courtyard.
- Buildings should have big east- and north-facing façades.
- Outdoor heating lamps.
- Inside the building: Use of light materials. Skylights and glazing draw sunlight into deep plans.
- Use of Water: Reflection of sunlight into pool of water to expand the area of day lighting.
Protection from the Westerly prevailing wind

- Building arrangement: Low, dense and irregular arrangement to reduce wind speed.
- Ornamentation: Design details on buildings help to slow wind speed around the space. This includes extension of roof or walls.
- Vegetation as barrier: Should include a combination of low and high trees and shrubs. Different levels allow wind to penetrate all openings to cut wind speed and reduce turbulence (Bokalders & Block, 2010; Erell, Pearlmutter, & Williamson, 2011).
- Windscreens: Should be perforated to divide wind speed and reduce turbulence.
2.3 LITERATURE REVIEW: PRECEDENTS

The following examples have been chosen to demonstrate ideas from certain aspects of my design ideas that together form the overall design proposition. Principles have been extracted to form a successful Restorative Urban Pocket.

2.3.1 Pocket Park Example: Paley Park, New York
Has a similar context and objective to my design proposition by exploring ideas of both convivial and contemplative zones.

2.3.2 Therapeutic Garden Example: Therapeutic Garden at SLU Alnarp Campus, Southern Sweden.
Exploring nature as an essential component to restoring health with emphasis on contemplative spaces

2.3.3 Auckland Example: Mahuhu Ki Te Rangi Reserve, Auckland Central and, Auckland Example: Wynyard Quarter, Auckland Central
To consider the cultural features of Auckland and to amalgamate place and architecture.
2.3.1 POCKET PARKS

Pocket parks, also known as mini-parks and micro parks, are urban open spaces on a very small scale scattered throughout the urban fabric. They take advantage of vacant and forgotten spaces to create communal areas within the busy urban life (Kaplan, 2010; Blake, n.d; Kronkosky Charitable Foundation, 2010). It also benefits the ecology of the surrounding cityscape. As the spaces are usually quite small (by definition) activities become limited and would be sufficient to provide only services that benefit the immediate community (Kronkosky Charitable Foundation, 2010). Therefore, detailed analysis of users’ needs are necessary. Many pocket parks are not well established or maintained because they have been built by neighbourhood communities and vulnerable to damage by extensive usage. Ecological functions are also less developed for this reason (Blake, n.d). Some people challenge the definition of ‘pocket park’ as inappropriate since the limited elements of greenery should not be called ‘a park’, but rather seen as a communal gathering point only (Newcomb, 2011). However, more contemporary pocket parks have taken sustainability and nature into consideration and developed better established spaces.
I have chosen to investigate Paley Park as a precedent example of a pocket park because the objective and context are similar to my proposed design. It traces back cultural influences from the 1960s and rich history background. Convivial and Contemplative spaces are the main ideas behind my Restorative Urban Pockets. This park demonstrates that the co-existence of calming, relaxing spaces (contemplative) and busy, heavily used areas (convivial) can lead to a success. Paley Park is acknowledged as one of the best urban parks (Blake n.d; PPS, n.d). Situated among high rise buildings, the natural setting of the park creates a calming and relaxing atmosphere, balancing out the noisy urban life. The design is mainly constructed of brick and stone (Fletcher, 2002). Using traditional materials enhances the theme of nature to harmonise with the greeneries and water features on site. The walls and canopy covered with dense greenery provide a covered platform for use while maximising the natural experience all around. The most notable feature is a waterfall that acts as a visual and noise barrier to the cityscape (PPS, n.d). The sound of nature over- riding the city’s noise creates a sense of peace and seclusion. The sound control and natural atmosphere contribute to the contemplative oasis.
While the park provides a sense of nature and relaxation, it is actually busy and popular. The size limits active usage to only resting and seating, but still attracts many workers, shoppers and tourists to occupy the space. This illustrates that as long as the facilities are suitable and fulfilling, the space will be successful. Movable furniture is popular, allowing users to freely adjust their personal space (Blake, n.d).

In the interviews (PPS, n.d), people pointed out that the elevated site brought interest to the design. “So that one enters an outdoor room. One ascends a few steps and already feels a bit removed from the urban din” (Fletcher, 2002). From the literature review, people seem to enjoy the changes in level as long as they are not too steep.

In conclusion, the Paley Park received positive feedback. The most successful qualities of the park (identified below) become a guiding reference for my design,

- Segregation of contemplative and convivial space was achieved by use of greenery and waterfall. Trees can create barriers for visual perception, while the waterfall allows both visual and sound to be diminished.
- Movable chairs are popular, ability to personalise own space.
- Change of level is favourable.
2.3.2 THERAPEUTIC GARDENS

From the literature review, it appears that one main component to alleviate the adverse effect of human health from urban density is by providing a contemplative atmosphere. Such an atmosphere has been explored through therapeutic gardens. This type of garden creates a sense of tranquility and relaxation attribute that is additional to pocket parks, enhancing the contemplative aspect of the design. Therapeutic gardens have become popular in recent years and are seen as an attempt to alleviate stress through natural effects (Therapeutic healing garden). By creating a calming atmosphere, mental and emotional health can be restored. The garden uses passive (exposure to nature experience) and active (horticultural therapy) methods to achieve results. A precedent example has been found for these therapeutic gardens to analyse and acquire the qualities that can be applied to my design.
Therapeutic Garden, Southern Sweden (Aspinall, 2010).
Location: SLU Alnarp Campus, Malmo, Southern Sweden
Size: Two hectares
Establishment: 2001 by SLU Alnarp Research

The garden has a different contextual background and objective to my design, but possesses some important characteristics in response to the need to create a contemplative, stress-free place. I have selected the Therapeutic Garden at Alnarp for investigation because it utilises nature and greenery in an individual contemplative space, offering restoration for our well-being. The gardens are particularly aimed at users who suffer from stress as a severe disorder, allowing them to get ‘back on track’. Therefore, spaces presented in the Therapeutic Gardens are very effective to relieve stress.

Each of the gardens has varying purposes but, all apply to our senses, constituting an important part of the design. The two hectares of space offer different areas for eight types of experiences that shapes the building blocks for a stress-free environment. All the gardens concentrate on individual use only, implying the preference of being alone under mentally unwell conditions. Figure 45 shows the relationship between each space. The garden is mainly separated into two main areas: The Nature Area and the Cultivation and Gardening Area, which utilises greenery in different ways to encourage physical and mental well-being. There are also lesser green areas such as the Hardscape room that provides cultivation on raised beds. This area is less preferred by its participants, suggesting the greater value of greenery for suffering patients.
<table>
<thead>
<tr>
<th>The eight experienced nature dimension</th>
<th>Description of the dimension</th>
<th>The Grove</th>
<th>The Meadow</th>
<th>The Traditional Garden Room</th>
<th>The Wildlife Garden Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Serene</td>
<td>Peace, silence and signs of care. Sound of wind, water, birds and insects. No rubbish, no weeds, no disturbing people, safe and secure. In its most distinct form, this can be described as having the character of a restful church interior.</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Rich in species</td>
<td>A room offering a variety of species of animals and plants</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>4. Space</td>
<td>A room offering a restful feeling of 'entering another world'. A coherent whole, like a beech forest.</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Prospect</td>
<td>A green, open place with room for vistas and a place that invites you to stay.</td>
<td></td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>6. Refuge</td>
<td>A sanctuary, an enclosed, safe, secret and secluded place, where you can relax and be yourself and also experiment and play.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Social</td>
<td>A meeting place for festivity and pleasure. A social area or meeting place.</td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>8. Culture</td>
<td>A place offering fascination through evidence of people's values, beliefs, efforts and toils, and perhaps with the passage of time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Dimensions of the nature/garden rooms (Aspinall, P., Bell, S., & Thompson, C.W., 2010)
Table 2 shows the eight types of experiences at Alnarp offering both passive and active methods of engaging with the nature and landscape. Both methods are considered of equal importance. Passive areas include resting and contemplative spaces that concentrate on nature-themed gardens, while active areas offer horticultural therapy. “Participants often felt that hard physical work in a peaceful environment is liberating and relieves tension.” (Aspinall, Bell & Thompson, 2010, p.130). Figure 46-49 shows four of the main gardens.

In the example, the daily treatment programme for patients has been discussed, which can become a reference to the activities that I will propose in my design proposition. Each has a certain extent of physical and mental workout to target the different levels of illness.

This includes passive activities such as:

- Resting
- Walking
- Massage
LITERATURE REVIEW

Figure 44: "The Wildlife Garden Room" at Alnarp

Figure 45: "The Grove garden at Alnarp"

Figure 46: "The Meadow garden at Alnarp"

Figure 47: "The Traditional Garden Room" at Alnarp
And active programmes such as:

- Cultivation activities related to gardening education
- Raking leaves: the sweeping motion appears to create a meditative effect
- Digging, compost work and setting stones
- Wood work

In conclusion, therapeutic gardens have meditative effect upon mental and emotional issues through the use of nature. Qualities to integrate into design follows:

- The whole garden is separated into two main sections for full restoration. Passive: Rest and walk; and active: cultivation.
- In Table 4.11, it appears that every garden space encompasses the natural dimension of “Rich in Species”, a room offering a variety of species of animals and plants. This contribution must be significant to diminish stress.
2.3.3 AUCKLAND EXAMPLES

We must consider Auckland’s cultural and social preferences to design a uniquely shaped intervention suitable for Auckland users. Previous international examples were based upon their cultural preferences and may encounter different qualities. Adapting to our own culture enables a sense of belonging and harmonises with the cityscape. After visiting Auckland CBD’s urban spaces, I have selected five areas for a brief analysis (Appendix A). Mahuhu Ki Te Rangi Reserve and the Wynyard Quarter seem the most appropriate to investigate.

**Mahu Hu Ki Te Rangi Reserve, Auckland Central**

*Location: Mahuhu Crescent, Auckland CBD*

*Size: 5,000 sq.m. (Auckland City Council, 2011)*

The reserve (figure 50-53) is suitable for investigation because its physical properties are comparable to my site. Mahuhu Ki Te Rangi Reserve is surrounded by office blocks and low rise apartment buildings. It is tucked away behind the busy main streets on both sides and acts as a quiet reserve for lunch breaks and access. The park has been lowered a few steps from the road to distinctly separate the boundaries. Nonetheless, ramps have been incorporated at each ends of the site to allow accessibility. Facilities on site are limited to seating only, but thoughts has been given for the placement and design to produce appealing, relaxing areas. There are also terraces and big steps that become extended seating.
The site generates a calm atmosphere by the input of nature such as various types of plants and a water feature, enhancing vision and sounds of nature. The park contains wildlife experiences, with pigeons, ducks, parrots and other birds lingering. The first site visit occurred on a rainy day. People were reluctant to use the open space. Some people stood under the big pohutukawa trees and waited until the rain ended. Seats were unoccupied since all of them were wet. People are reluctant to use a space for leisure if they will get wet. Many urban spaces in Auckland encounter the same problem. The lack of sheltered space prevents use due to an undesirable climate and weather. On the second visit, the weather was much improved. Sun and shade created a great contrast to the park. Figure 50 shows that people preferred resting in the sun rather than in the shade, given that the area is dry.
The Wynyard Quarter is a contemporary convivial public space that focuses and enhances Auckland’s cultural context. It is a newly developed public space on the reclaimed area by the Viaduct Basin. The space links the two sides of the viaduct and, most importantly, celebrated the Rugby World Cup 2011 competition held in New Zealand. Since it is an international event, cultural features must be explicitly demonstrated. The area consists of parks, plazas, boulevards, retail areas, restaurants, offices and apartments, as well as having a flexible area for temporary use such as markets and events, including an outdoor cinema. The place is successful with many locals and tourist occupying all areas of the site. The modern approach contains new design inputs such as movable chairs, which allows users to freely position their own area of seating. Terraced seating that overlooks both the harbour and the Viaduct Basin also seems popular.
Figure 54: Examples of water feature

Figure 55: Examples of plantation

Figure 56: Shaded areas left unoccupied

Figure 57: Preference of outdoor seating and the sun

Figure 58: Example of terrace seating

Figure 59: Example of flexible seating
Similar to Mahuhu Ki Te Rangi Reserve, the Wynyard Quarter illustrates the preference for sun over shade. In figure 58 and 59, people tend to take the sunny paths rather than the shaded areas. Outdoor seating as well as the sunbathing seats are almost always occupied. The strong emphasis on nature also provides a calming effect against the convivial atmosphere. Plantings and water features soften the hardscape space and helps to freshen the air (Figure 56 and 57).

Concluding the Auckland examples:

- The natural features of plantation and water attract wildlife, and in turn attract people with the relaxing atmosphere created by nature.
- People prefer dry, sunny areas
- Music can attract people and enhance mood.
- Popularity of movable furniture.
- Gehl’s (2010) idea of linking spaces for a successful urban development has been demonstrated by the connection of the two viaduct spaces.
DESIGN OUTCOMES OF PRECEDENT STUDIES


POPULARITY OF MOVABLE FURNITURES: Sense of personal space.

SIGNIFICANT EFFECT OF WEATHER: Space only occupied during dry, sunny weather.

RICH IN NATURAL PRODUCTS: Variety of Animals and Plants.

THERAPEUTIC NATURE RESTORATION: Passive (Rest and Walk), and Active (Cultivation).

Figure 6.2: Flow diagram to conclude findings of Precedent Studies.
Humans are complicated and differ considerably from one another. Each individual requires unique solutions to how this restorative effect can be activated. This would be influenced by inherited personality as well as social backgrounds. However, by grouping the individuals, we can provide a generalised type of space for each social group. Two main groups have been identified: urban dwellers who are fully adapted to the urban lifestyle, and those who suffer from the adverse effect of urban density and associated issues.

In general, people like being with others (Gehl, 2010). A lively atmosphere attracts more users. It is human nature to share and bond with other people from similar backgrounds to feel a sense of affiliation and to promote well-being. However, the needs and demands of suffering urban dwellers appear to differentiate from the norm. People who suffer from the urban density syndrome require a less convivial atmosphere, providing them with space for contemplation and mental relaxation.

From the literature review, I have concluded the main findings as the typologies of spaces (figure 65) that are essential to encourage well-being in an urban context. This indicates the need for two contrasting spaces in an attempt to match the needs of both user groups.
While the two spaces portray different characteristics, the most basic human needs should be demonstrated in both areas. Our intimacy and origins with nature is said to have a positive effect on our well-being and should be a neutral layer between the convivial and contemplative areas. Reflecting upon the precedent examples of Auckland, the lack of shelter from undesirable climate reduces their use at certain times of the year. The space therefore becomes wasteful. Being dry and warm is a basic commodity of human needs. By providing sufficient shelter through the site, we can encourage use at all times.
3.0 METHODOLOGY
In the design thesis, I have used both quantitative and qualitative research methods to support the design idea of my critical question being: What are the architectural principles and ideas that can be applied to urban-scape in Auckland CBD to relieve the tension resulting from urban density? From there, I have generated sub questions that can be investigated. My hypothesis is that the insertion of Restorative Urban Pockets through existing potential urban-scape will improve well-being in urban living. The research question and hypothesis became the driven force to the whole design. To evaluate against my hypothesis, I carried out several investigation methods including:

- Selection of a potential site
  *To analyse the context of Auckland in consideration of cultural perspective and understanding the extent of the problem.*

- Resident Survey
  *For users of the chosen site. Obtained subjective information to draw findings about their opinions towards their surrounding environment and their requirement of facilities.*

- Ongoing literature review and research
  *To investigate precedent examples and principles.*

- Presenting a design proposal
  *To assess my hypothesis and findings with realistic constraints.*
DATA AND DISCUSSION

4.0

4.1 INTRODUCTION TO DATA AND DISCUSSION
4.2 THE SITE
4.3 CONCLUSION TO DATA AND DISCUSSION
Both the instruments used (Site observation and Survey) gave information about the existing condition of the site and people. It is important to note what is perceived to be undesirable and to understand in what ways we can improve upon the existing urban fabric. Site observation and survey results are primary data that allow the thesis to be conducted specifically for the site.
Potential Urban-Scape

1. Morton Street: Open Space
2. Kingston Street: Redundant Space
3. Swanson Street: Carpark
4. Beach Road: Redundant Space
5. Eden Crescent: Small Carpark + Redundant Green Area
6. Whitaker Place: Redundant Green Space
7. Liverpool Street: Redundant Area
8. Hopetoun Street: Redundant Carpark

Figure 66: Site plan of Auckland CBD outlining potential site for development. Top three sites were chosen for further analysis.
4.2 
THE SITE 

4.2.1 SITE SELECTION AND ANALYSIS 

After the brief had been written, a site for investigation was necessary to demonstrate the ideas and principles from my research. I had decided to investigate the potential of in-between spaces in an urban context. This ‘Potential Urban-Scape’ typology became a guideline for the selection of a suitable site.

5 points of Specification:

- The site must be in Auckland CBD.
- It must be a redundant space or one that has potential for better spatial organisation.
- The site should have at least 400 sq.m. of open space to allow sufficient area for supporting facilities.
- It should be heavily surrounded by mid- or high-rise buildings.
- The surrounding environment of the site should portray a sense of discomfort.
Three sites were chosen for further analysis as identified on figure 68. Photographs and sketches gave supporting evidence (Appendix B) that the site on Eden Crescent was most suitable to develop my design proposition in accordance with the five points of specification. The site was then analysed in depth, which provided very important information towards understanding the context and the placement of programmes. This includes existing circulation, neighbouring buildings and condition of the environment.

To adapt with the Auckland context, we must acknowledge the site in regards to the area as a whole. Auckland’s CBD has a grid arrangement layout (Figure 69) with a central focus housing some important architecture including the Town Hall, Civic Center and Aotea Square. All building blocks follow a regular arrangement but are slightly shifted to focus on the central node (Figure 70). The layout of Eden Crescent is, however, distinctive to the rest of the CBD. Because it sits on the verge of the boundary circle, the block layout is curved and creates an organic form of circulation (Figure 71).
DATA AND DISCUSSION

Figure 70: Entry from Eden Crescent-Surrounding by high rise buildings, existing property not to human scale.

Figure 71: Entry from Law Car Park- Surrounded by car park with bad daylight penetration.

Figure 72: Entry from Parliament Street- Surrounded by two apartment blocks confining the entrance.
The chosen site on Eden Crescent (Figure 72-74) currently consists of a car park that belongs to the private property of Westminster Building and conjoining a redundant green space that had not been maintained for some time. Graffitied walls and damaged fences induce an unsafe environment. Although the car park is private and well maintained, the location is wasteful of ground space. The car park has two levels and occupies a great amount of horizontal ground space when compared to the surrounding apartment buildings. The site receives good sunlight that can be used to develop communal spaces to benefit the surrounding users.

Production of a preliminary site model (figure 75) has helped the writer to understand the site in a 3D configuration. The site model gave information about the contours and the physical characteristics of existing buildings.

Figure 73: Photograph of Site Model showing contour and surrounding physical properties
Figure 74: Identifying site and zoning of surrounding buildings
The area of the site is approximately 1,500 sq.m. allowing sufficient space for generation of facilities. It is surrounded by high rise apartment blocks and several University of Auckland office properties (Figure 76).

An analysis of the solar path determines the location facilities and activities. It also determines which areas should be shaded during the summer or encouraging sunlight during cooler seasons. In an urban site, daylight does not necessarily penetrate through the usual northern side. In Figure 77, we can observe that there is less obstruction of daylight on the southern side of the site, so it would be more appropriate to place outdoor activities there. The northern side is mostly shaded by neighbouring building and would be suitable for indoor activities.

Wind and temperature also need to be considered to provide areas that are comfortable for use. The entry from the lawn car park to the site is vulnerable to the strong westerly prevailing winds so would need mechanisms to reduce wind speed.

Figure 75: Initial sun analysis of the site
1. ENTRY: FACULTY OF LAW CARPARK
2. ENTRY: PARLIAMENT STREET
3. ENTRY: EDEN CRESCENT
4. FACULTY OF LAW OFFICE
5. WESTMINSTER COURT APARTMENT: MAIN ENTRY
6. WINDSOR TOWER APARTMENT: ESCAPE STAIRS

Figure 7.6: Connections to site between neighbouring properties and entrances
The site is connected by three entries and three neighbouring units (Figure 78). Existing entries from the Faculty of Law car park and Parliament Street are currently blocked off by fences, making Eden Crescent the only point of entry. The three neighbouring units include Westminster Court main entry, Windsor Tower escape stairs entry and Law Faculty main entry (Figure 79).
Figure 78: Selected apartments for Site Survey
4.2.2 SITE SURVEY

The previous research identified in the literature review was mainly objective principles regarding the critical question. However, cultural differences and requirements from users may lead to a slightly different outcome. By conducting a questionnaire for residents closest to the site of investigation, subjective information can then be retained.

The questionnaire was produced through Survey Monkey Website (Appendix C) and has been posted on the internet (http://www.surveymonkey.com/s/VDMCPX9) inviting people living on Eden Crescent and Parliament Street to participate. Residents in the five closest apartment blocks were invited to participate by placing flyers in their mail boxes (figure 80). Different versions of flyers have been created specifically for each apartment (Appendix D).

Questions were shaped around two main ideas:

A. How users felt about their surrounding environment, and

B. Their expectations and needs of the space
Thirty questionnaires were returned, mainly including opinions of the poor existing environment and facilities that enhances their lifestyle. As figure 81 shows, 42% of the respondents are in the age group of 23-30 years. Facilities and the site should be shaped to suit adult use. 8% of the participants are older than 50, necessitating alternative methods of travel to be considered, such as the use of ramps and elevators.
**Figure 79:** Age group of survey participants

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td></td>
</tr>
<tr>
<td>23-30</td>
<td>15</td>
</tr>
<tr>
<td>31-50</td>
<td></td>
</tr>
<tr>
<td>50+</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 80:** Why are you living (or did you live) at your location? Tick as many

<table>
<thead>
<tr>
<th>Reason for Place of Dwelling</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close to work or education</td>
<td>25</td>
</tr>
<tr>
<td>Close to facilities and recreational services</td>
<td>15</td>
</tr>
<tr>
<td>Affordability</td>
<td></td>
</tr>
<tr>
<td>Quality living</td>
<td>5</td>
</tr>
</tbody>
</table>

**DATA AND DISCUSSION**
HOW SATISFIED DO YOU FEEL?

Most of the surveyed participants were in some way unsatisfied with their living environment (figure 83). As figure 84 shows, most people live there due to the convenience of everyday duties. Some of the issues identified were poor security and safety matters, deficiency of green spaces and communal areas, and minimal facilities available. 72.4% of participants were dissatisfied with their surrounding green spaces, either being insufficient or in an unacceptable condition (figure 85).

Figure 81: SATISFACTION TOWARDS EXISTING ENVIRONMENT

- Satisfied: 63%
- Unsatisfied: 37%
Figure 82: How are you unsatisfied with your living environment? (Your neighbourhood, not house)

Figure 83: What do you think of the green spaces around your immediate living environment?
HOW SAFE DO YOU FEEL?

Figure 87 and 88 show users’ concern for safety, especially at night. Rain and cold weather also discouraged use. Refer to Chapter 2.2.3 Design Mechanisms to Ensure Occupancy for design principles to resolve those concerns.
During winter season
At night
During or after rain

How safe do you feel in your surroundings?

Figure 85:

Is there any time of the day or season of the year that discourages use of the space? Tick as many

Figure 86:
WHAT ACTIVITIES DO YOU ENJOY?

The data revealed some of the activities that users felt would evoke a sense of relaxation. Figure 90 was a useful tool to determine the programmes for the site. Activities include permanent and fixed, social and individual uses.

Figure 89 showed that users around the site requires both social and individual activities, implying the needs of both types of spaces.
What activities do you enjoy doing in your leisure time that makes you feel joyful and relaxed? Tick as many

Fixed Activities

Flexible Activities
The existing site appears to be rather unpleasant, a conclusion from both self-observation of the site and residents living in the surrounding apartments. All the negative physical attributes discussed above are due to the crowded environment, creating tension in the atmosphere. However, the site demonstrates good potential for development. Firstly, the space is identified as having a good prospect for better development. Beautifying the space would help to improve the overall image of the urban fabric and reduce the insecure feeling of redundancy. Secondly, the surrounding buildings are well developed and fully occupied, allowing the site conceivably to be occupied at all times of the day.

With reference to the literature review (Chapter 2.3, Concluding Literature Review) findings concluded the need for both convivial and contemplative spaces. Convivial spaces concentrate on social and communal use, while contemplative spaces concentrate on individual use. The survey results supported the need for the two spaces by almost equal preferences of individual against social activities. Subjective and objective information argue for the need of both types of spaces.
The survey results provided participants’ opinions on enjoyable activities and facilities they wish to engage in. The results have been processed against the climatic analysis to allocate possible facilities (Appendix E). In particular, exposure to sunlight has been a major consideration for placement of social activities and circulation routes. While most people prefer the sun under convivial standards, shading also has its advantages during summer months and contemplative times. The fluctuation of climate change is a concern for human use. In the survey, users noted that they would not use the space during or immediately after rain. As observed in the site analysis, there is no covering provided by the existing buildings that help to shelter from the rain. Similar to the other urban spaces of Auckland City, the absence of shelter from and control of undesirable climate reduces the use during certain times of the year. By providing sufficient shelter through circulation paths and seating areas, we can encourage use at all times.
DESIGN PROPOSITION

5.0

5.1 INTRODUCTION TO THE DESIGN PROPOSITION
5.2 OVERVIEW OF THE DESIGN PROPOSITION
5.3 SPATIAL PLANNING AND SITE ORGANISATION
5.4 FACILITIES AND PROGRAMMES IN RELATION TO OUR SENSES
5.5 ARCHITECTURAL QUALITIES FOR RESTORATION
The final chapter in this thesis begins with an introduction to the design scheme, an overview of the spaces and programmes. The next three chapters discuss in detail the principles and theories that inform the design and how the design validates my hypothesis.

5.1 INTRODUCTION TO THE DESIGN PROPOSITION

5.2 Overview of The Design Proposition

5.3 Spatial Planning and Site Organisation
   5.3.1 Context and Site Configuration
   5.3.2 Transition of Spaces

5.4 Facilities and Programmes in Relation to our Senses
   5.4.1 Convivial Programmes
   5.4.2 Contemplative Programmes
   5.4.3 Neutral Programmes

5.5 Architectural Qualities for Restoration
   5.5.1 Design Mechanism for Ever-Changing Needs
   5.5.2 Nature and Well-Being
   5.5.3 Materiality and Colour
THE PROBLEM STATEMENT

EXISTING PROBLEM: CROWDEDNESS, DEPRIVED OF RELIEF SPACES

POOR MENTAL HEALTH

INCREASED TENSION

URBANISATION

POPULATION GROWTH

PROFIT & MOTIVATED PLANNING

HEALTHY URBAN DWELLERS

SUFFERING URBAN DWELLERS

CONVIVIAL SPACES

CONTEMPLATIVE SPACES

REQUIREMENT

STAGE ONE REQUIREMENT

STAGE TWO REQUIREMENT

THE DESIGN PROPOSITION

DESIGN PROPOSITION

1. SPATIAL PLANNING AND SITE ORGANISATION

2. FACILITIES AND PROGRAMS IN RELATIONSHIP TO OUR SENSES

3. ARCHITECTURAL QUALITIES FOR RESTORATION

Figure 89: Flow diagram showing formation of design proposition.
This chapter introduces a design proposition that demonstrates all the preceding ideas and principles discussed. The design becomes another instrument to assess my hypothesis. Figure 91 shows an overview of the design principles, derived from analysis of urban user groups. The main ideas to creating a Restorative Urban Pocket:

A. Consideration of Cultural Perspective
   *Form factor and Shelter Covering derived from reference to Auckland culture and context.*

B. Programme and Facilities
   *Activities provided are regarded as ‘joyful’ by results and findings from Site Survey and Literature Review.*

C. Nature
   *Insertion of natural elements through buildings and interactive spaces.*

D. Safety and Security
   *Connections with neighbouring properties and entry points form transitional zones to create a sense of affiliation. Use of lighting encourages night use.*
Figure 90: Main perspective showing overview of the design proposition
The design proposes a communal urban space development in Eden Crescent, Auckland Central. The proposition is sited on a potential urban segment within a series of high-rise buildings in an attempt to improve the health issues that persist with urban density. These Restorative Urban Pockets comprise two contrasting spaces, Convivial and Contemplative, which amalgamate to create an embellished experience to unconsciously enhance our well-being. Each space acknowledges the human senses and user’s requirements, which will demonstrate the validity and hypothesis of my research and investigation.

The site is situated on a potential urban-scape, which is defined as redundant spaces or areas that have the potential for improved development. The design proposition occupies a redundant green area adjoining the existing car park of Westminster Court. Currently, the two-level parking is occupying a considerable amount of valuable ground space. By relocating the car park underground, ground space can be cleared for development. The site houses a combination of fixed and flexible programmes offering both convivial and contemplative atmospheres in different areas. The convivial programmes are mostly designed for communal use, while contemplative programmes are suitable for individual use. The programmes have been generated according to features that induce a sense of restoration.
THE COMPLEX
GYM LOBBY
THE COMPLEX
BOOKSTORE
THE TRELLIS GARDEN
CENTRAL COMMUNAL SPACE
FLEXIBLE SEATING
OUTDOOR SEATING
(RESTAURANT)
THE RESTAURANT
SOUTHERN COMMUNAL SPACE
OUTDOOR SEATING, MARKET
PLACE, PERFORMANCE ARENA,
OUTDOOR CINEMA

Figure 92: Site plan of design proposition outlining main programmes

SCALE 1:400
The Complex
On the northern side of the site (the lower point) is a four story complex that is half submerged into the ground. Half of the ground level is a bookstore and the other half is a gym that extends to occupy the top level of the building. The bottom level contains the changing rooms and reception area and the top level is dedicated to gym equipment. On the second level of the gym there are outdoor spaces on each side and a rooftop garden for social spaces. The underground space of The Complex is a double height gallery with a tea lounge on the mezzanine floor. The main entry to the gallery is via the Law Car Park entry that opens up to the mezzanine level. The Gallery connects to the proposed underground car park.

The Trellis Garden
The Trellis Garden is a therapeutic garden that also forms a semi-open circulation path in the center of the site. Climbing plants are grown on the trellises for people to cultivate and consume in The Restaurant.

Passive Spaces
Resting areas with movable furniture are dispersed around the site. The smaller passive spaces include areas between the circulation paths, while the bigger spaces include the Communal Spaces, the terrace seating, the rooftop stage and the rooftop garden.
The Restaurant and Southern Communal Space
A fully open-plan restaurant/cafe with rotatable walls allows the space to be flexible. Large outdoor spaces on both sides of The Restaurant provide space for outdoor seating. At times when not many people occupy the restaurant, the outdoor space may be used as a weekend market. The restaurant has implemented a rooftop stage on the southern side of the site for:

A. Stage performances with terrace seating overlooking the stage, and
B. Flexible seating on the stage for outdoor cinema experiences where projection is on the façade of Windsor Towers.

Underground Car Park
An underground car park has been proposed directly under the existing carpark to compensate for the loss of Westminster Court private parking. The current car park holds 50 parking spaces, while the proposed car park will accommodate 100 spaces for both private use (Westminster Court residents) and public use. Level UG1 and UG2 are for private residents and UG3 and UG4 are for public use.
5.3 SPATIAL PLANNING AND SITE ORGANISATION

5.3.1 CONTEXT AND SITE CONFIGURATION

The context of Auckland CBD established the basic dimension of the design. With consideration to the outer context, we can ensure minimal stress to the existing environment and people. The street layout of Auckland CBD (refer to Chapter 4.2.1) merges the two layers of configuration:

A. Regular grid structure: Rational urban planning, and

B. Buildings closer to the center are arranged to face the focal point at the core of the district.

The building components of the design have adapted the regular grid structure with an emphasis of accentuating the linear focus towards the central node. This is evident in the plan shown on figure 94. Building footprints and regular upright walls are all based on rectilinear geometry creating a rational layout. The Trellises forms the linear axis converging towards the center of CBD. Roof-lines of the Restaurant and The Complex also converge towards the same direction as shown on figure 95.

In reflecting upon the circular node, the whole CBD is encapsulated in a circular boundary. The street formation of the block forms an irregular, organic movement. This layout pattern is reflected through the cross section of the design. The whole design is connected by an organic Shelter Covering and irregular planes of the roof-lines as shown in figure 96.
Figure 93: Site plan of roof top. Planes converge towards CBD central node. Note: for corresponding sections, refer to latter pages:

Section A-A: Page 104
Section B-B: Page 116
Section C-C: Page 106
Section D-D: Page 100
The organic movement flows from the curved block of Eden Crescent into the site and through the other two entry points. Organic paths have been embedded to create a labyrinth experience as “curves and bends offer intriguing options, like something is around the corner” (Cullen, 1961, p.56). The circulation route will reconnect entries from the Law Car Park and Parliament Street, placing equal emphasis on the three openings. As the site is rather steep, many steps and ramps have been implemented. The layering of geography is enjoyed by users (Shaftoe, 2008). The level changes segregate programmes while the offset of the site embellishes the space and entices exploration (Pps, Paley Park).

The size of the site is 1,500 square meters. It corresponds to the ideal dimension for urban space development. Good public spaces tend to be small to medium in size. This provides sufficient space for facilities, while being easily managed and perceived. (Lynch, 1971; Alexander, 1977; Gehl, 2010). The area of the site occupies two properties merging the connection of two rectangular geometries. Well-planned convivial spaces consist of a few areas that are well connected (Shaftoe, 2008). Building components are positioned to form segregating spaces for different activity usage. This configuration adapts to Shaftoe’s theory that urban spaces should be ‘sequentially revealing’. However, people feel more comfortable when they can visualise the entire space. This has been achieved by creating transparency through glazing on The Complex and openness through rotatable walls on the ground level of The Restaurant. Simple geometry of site allows easy access of vision.
Figure 95: Proposed Entry from Law Car Park

Figure 96: Proposed Entry from Parliament Street

Figure 97: Circulation route through site
5.3.2 TRANSITION OF SPACES

According to the literature review and survey results, we realise that there are two main types of social groups among urban dwellers. Each group reacts differently to the surrounding urban space, generating two distinct types of spatial requirements: Conviviality and Contemplativeness. In some of the key references, 'Convivial Urban Spaces' (Shaftoe, 2008) and 'Cities for People' (Gehl, 2010), we can conclude that people generally prefer a lively atmosphere. The literature suggests that it is the 'key to successful urban spaces' (Gehl, 2010). Formation of convivial space targets the majority of users. It concentrates on communal use and encourages social cohesion.
CONVIVIAL
- Healthy Urban Users
- Warm Ambience
- Exposure
- Communal Use
- Excessive Noise
- Flexible Program

CONTEMPLATIVE
- Suffering Urban Users
- Cool Ambience
- Enclosure
- Individual Use
- Noise Control
- Fixed Program

CONVIVIAL
- Outdoor Cinema
- Open Planned Restaurant
- Performance Stage
- Market Stall

CONTEMPLATIVE
- Gym/Fitness
- Underground Gallery
- Bookstore
- Underground Cafe

= Restorative Urban Pocket

Figure 99: Components to creating a Restorative Urban Pocket
On the other hand, and more specific to my design, the other group of urban dwellers are not so well adapted to the rapid development of urban environment and therefore suffers from the tension of crowdedness. Contemplative space concentrates on calming and relaxing effects through individual activities, which attempts to retrieve the origins of our natural and basic commodities of human needs. Being exposed to the effect of contemplative space, suffering urban users will be revived and their needs will then become the same as the healthy urban dwellers (second stage requirement). The two spaces each have their own specification by design intention and function assigned at each end of the site, but overlap in the center to establish a transitional zone that slowly progresses from one space to another.

The spaces have been segregated according to the dimensions of our vision and sound senses. The lively and noise productive space (convivial) are induced at the southern end of the site, while the northern side induces quiet contemplativeness. My design has illustrated Conviviality and Contemplativeness by its atmosphere and programmes. A summary of the specification is shown of figure 101.
The intensity of conviviality can be determined according to its exposure levels and, in contrast, contemplativeness can be determined through the levels of enclosure. Figure 103 shows the increase of conviviality, hence level of increasing exposure on the site. The transitional zone is important for users to have the choice to freely occupy space for restoration from a range of intensity levels in regard to their needs. Conviviality increases from The Restaurant (enclosed, but can be semi-opened) to the Southern Communal Space where it is fully open and accessible. Contemplativeness is achieved vertically from a fully enclosed underground gallery to opened spaces, but where access is restricted.

Although it seems logical to allocate Convivial Space on the northern side of the site, since people predominantly enter from the lower point, but spaces are positioned because:

- Outdoor cinema is a convivial programme and relies on the exterior wall of Windsor Tower on the southern side
- The Convivial side receives more daylight (due to fewer obstructions) and is therefore more appropriate to allocate outdoor activities that enhance conviviality
- Reconnection between the three entries attempts to encourage equal use of each entrance, thereby de-emphasising the Contemplative side as the main entry.
- The ground level of The Complex is fully enclosed and the outdoor areas are uplifted. Even if most users enter from the Contemplative side, the enclosure restricts engagement and distraction from incoming users.
Placement of facilities and urban furniture in the Convivial Space are more compact and revealing. Terrace seating, restaurant seating and proposed activities are generally more open planned and horizontally developed, allowing vision of human interaction across the space. Position of facilities in the Contemplative Space is more generous and separated into more subdivisions by different storeys from vertical development. Vision and sound are therefore diminished between levels, achieving more privacy for individual use. At 20-25m, communication is made only with difficulty. The main section of Contemplative Space (The Complex) and the most Convivial area (Southern Communal Space) is sited at either end with 27m difference, effectively reducing cross-contamination. The addition of a ‘water wall’ on the northern side of The Restaurant replaces the somewhat less pleasant noises of people with more relaxing noises of nature, suitable for both convivial and contemplative space users.
Figure 102: Section D-D, showing Transitional Zones between neighbouring properties
The idea of transitional changes also exists between each of the neighbouring connections to maintain a sense of affiliation while respecting existing users. As Figure 105 and 106 shows, Westminster Court and Windsor Tower each has a square of outdoor communal space that allows private residents to occupy and overlook the public area. Both neighbouring buildings have formed the transition zone by level change from the surrounding landscape, thus creating a physical barrier with the existing landform. While visual access is permitted, physical access into the transitional zones is discouraged. The underground car park also separates user groups by designated levels for private and public use (figure 107). Each group has its own elevators. The private elevator arrives just in front of the main entrance of Westminster Court while the public elevator arrives outside the Trellis Gardens and The Restaurant. The transition zone from the neighbouring law office is minimal since the change is from public to public. However, stairs between the frontal courtyard of the law office and level Two of The Complex opens up a connection into the site (Figure 109).
Figure 105: Separation of Private and Public parking. Designated lift for each party

DESIGN PROPOSITION
Purves (2004), Gehl (2010) and Jencks & Kropf, (1997) believe that the dimension of a building affects the acceptance of our comfort. The design has considered the human locomotor system, accounting for our limitations and biological capabilities, which is to build according to the human scale dimension. Gehl and Purves’ idea is to form a serial progression, where architecture is created at eye level that gradually rises with the taller buildings behind. The main building block of the design proposition is The Complex, The Trellis Garden and The Restaurant. The Trellis Garden is the central component that forms the main axis of the site and is the lowest in height, while The Complex and The Restaurant rise higher to form a gradual and subtle change of height with the neighbouring properties. Figure 108 shows the horizontal skyline of the design, creating a line of serial progression.
CONVIVIALITY

Figure 107: Section A-A, Overview of design proposition
CONTEMPLATIVE
Figure 108: Section C-C, View towards Convivial Space
5.4

FACILITIES AND PROGRAMMES IN RELATION TO OUR SENSES

Each of the programmes have been established by users’ needs (refer to Chapter 4.2.2-Site Survey) and, more importantly, to our inherited senses.

A programme list was generated according to these values. The variables indicated:

A. Suitable for outdoor or indoor use

B. Active times of each programme

As Pallaasma identified, the inhumanity of contemporary architecture exists from disparity of our senses (Pallassma, 2005; Holl, Pallassma, & Perez Gomez, 2006). The design proposition as a whole integrates different programmes to offer a full multi-sensory experience, balancing our sensory systems to restore well-being. To keep the spaces active at all times, each space may be allocated with more than one function that alternate at different times of the day to fully utilise that space.
5.4.1 CONVIVIAL ACTIVITIES

Located on the Southern end of the site. Majority of outdoor activities encourages social cohesion and promoting a lively atmosphere to restore well-being.
The Restaurant

Although The Restaurant (figure 111) forms the only building component in the convivial section, it is not entirely enclosed. Revolving walls and open-plan layout enable the flexibility of becoming exposed. Communal open spaces on either side allow for extension of outdoor seating and engagement with the surrounding. When the walls are rotated at 90 degrees, it communicates well with The Complex top floor timber extensions (figure 113). The restaurant may consume harvested materials from The Trellis Garden. The use of locally grown products promotes a sense of cultural belonging. Food has the ability to attract customers and positively evoke our smell and taste senses by reminding us of our basic human needs. “Human psychological needs are simple, to be warm and to have enough food and drink.” (Kronenburg, 2007)

We realise that customers often stay longer than is required only to consume their food or cup of coffee. The reason is that social cohesion happens implicitly while engaging in such activity. Coffee breaks are considered a recreational activity. While some people consume coffee for relaxation, others restore well-being through social interaction.
Rooftop Stage

The south-facing dimension of the roof is a stage to allow occasional performances. Terrace seating for the stage is located by the façade of Windsor Towers. Performances will attract users to view and thus promote social cohesion. In particular, music performances have been shown to be preferred amongst other flexible activities as shown in the Site Survey results in Chapter 4.2.3. Music has the ability to influence our moods and emotions by the tempo being played.
**Weekend Market**

During the afternoon, the Southern Communal Space is often occupied by restaurant users. In the weekend mornings, the space is dedicated to market use. It is expected that people outside the immediate neighbourhood will visit. The smell and taste of food, the texture of goods and the vision and sound-scape of people all evoke our sense of conviviality.
Outdoor Cinema

When the stage is empty, the space becomes a seating area for outdoor cinema experiences. “Watching a movie” was the most joyful and relaxing activity as shown in the Site Survey results in Chapter 4.2.2. Movable chairs and beanbags allow the freedom to allocate one's own personal space. Movable furniture has been a successful and popular attribute (Blake, n.d.; Gehl, 2010) as demonstrated in the Precedent Examples. The movie projection relies on the façade of Windsor Tower since there is minimal obstruction on the existing wall. The projection screen covers most of the building's escape stair aisle, but use of a semi translucent material allows daylight to penetrate during the day.
Figure 116: Section B-B, View towards Contemplative Space
5.4.2 CONTEMPLATIVE PROGRAMMES

Located at the northern end of the site. Most of the programmes are indoor and focus on individual use. A quiet and calm atmosphere restores well-being for suffering urban users in particular.

Gym

The gym occupies the top level and half of the ground level of The Complex. World Health Organisation, 2011 and Gehl, 2010 recognise inactivity as one of the key contributors to the global burden of ill health. Healthy exercise is one of the most efficient stress relievers. Exercise helps to work out our physical as well as mental capacity to release tensions within our bodies. (Refer to chapter 2.2.2 for more information about exercise for well-being.)

The form of the top level is jagged vertically for function consideration and to create an active façade that appears to stimulate our visual senses, making us feel a sense of joy and benefiting our psychological health (Gehl, 2010).
Figure 118: Roof design of The Complex- Allowing ventilation and daylight penetration, but rejecting rain.
The top area of the Complex is broken into smaller sections and adjusted to create small outdoor areas for individual use rather than a big area of communal space. As shown in figure 121, the arrangement of the top level creates 8 outdoor spaces. Spaces 2-5 are almost fully shaded while the rest are exposed to sunlight. Users get the option to occupy different exposure levels of outdoor spaces. On the top of the whole building is a green roof that provides a shared outdoor space. By uplifting the outdoor spaces and placing it furthest from the ground circulation, contemplative users can experience outdoor engagement without the unpleasant noises from human interaction. The rooftop space, top level of the gym and most of its outdoor spaces offer views to The Trellis Garden, exposing visual engagement with Nature. The rooftop garden is protected by another roof structure that is half glazed to allow sun penetration while repelling rain (figure 120). Roof of The Complex is slanted to communicate with The Restaurant roof structure.
**Bookstore**

The other half of the ground level is occupied by a bookstore. Quiet reading spaces concentrate on individual use. Books stimulate our mind to develop related scenarios. Similar to watching a movie, we are able to relax or create our own world by escaping into fantasy.

**Gallery and Tea Lounge**

The double height space of the gallery allows a spacious and contemplative atmosphere as the sound of people walking echoes through the solid concrete walls. Perceiving art work is a leisure activity and induces our relaxation through evoking our visionary senses. The effects of art in general are less limited to certain ages or cultural differences, and are thereby inclusive for all possible users. The mezzanine level of the gallery includes a Tea Lounge, where people can provoke their taste and scent buds while enjoying the gallery exhibition to trigger visual and touch senses. The Gallery and Tea Lounge offers stimulation to our five senses.
Figure 123: Render of Gallery Space
5.4.3 NEUTRAL PROGRAMMES

Located in the center of the site. Not convivial or contemplative, but restores well-being by other architectural qualities.

The Trellis Garden

The garden restores our well-being through passive and active methods by merging horticultural therapy and natural restoration. (Refer to Chapter 2.2.1 and 2.3.2 for more information). Passive methods include resting and walking through the trellises to engage with our visual sense. Active methods include learning and cultivation (physical work) to engage with our senses of touch, vision and smell. Gardening allows a great source of pleasure and peace of mind, improving mental and physical health (Bell & Thompson, 2010; Bokalders & Block, 2010). The Trellis Garden offers a physical and mental workout, creating a thorough experience.

Fruits and plants that grow on The Trellis Garden are locally harvested and can be consumed in The Restaurant to stimulate our taste and smell senses. Likewise, the benefits of Nature attracts wildlife, establishing positive sound and vision effects.

A precedent study suggests that a variety of species of animals and plants restores our well-being. The scent and taste of edible crops, flowers and plants also enhances the environment. The climbing plants help to create shade for users.
5.5
ARCHITECTURAL QUALITIES FOR RESTORATION

5.5.1 DESIGN MECHANISM FOR EVER CHANGING NEEDS

Having regard to Auckland’s fluctuating weather, design mechanisms must protect against the element for all four seasons and at all times of the day. Precedent studies revealed that no matter how appealing the space is, people hesitate to utilise it in absence of human comfort.
**Protection from the sun and heat**

The dispersal of deciduous trees through the site provides shelter during summer and permits daylight during winter. In addition, a water feature on The Restaurant humidifies the air and evaporation reduces temperature. Figure 118 shows the rotatable walls which allow flexibility for climate control. The Shelter Covering creates scattered shades around the site. (See below for further discussion on the Shelter Covering). It is regarded as a more effective shading device than plantations, since fixed physical properties allow accurate angles of shading.
Protection from prevailing wind

Protection from the Westerly prevailing wind is achieved by low and irregular arrangement of the building components. Existing buildings (Westminster Court in particular) shelter most of the site already. The only leeway that needs protection is on the contemplative side from the Law Car Park. Trees and shrubs at different levels are placed to reduce wind speed and turbulence, while ensuring vision and access are maintained (figure 129). The plantings also help to beautify the frontal gallery entrance. The top level of The Complex has protruding timber extensions that divide outdoor space and help to reduce wind speed from the ornamentation.
Figure 128: Sun study of the design proposition. Analysis of shaded areas in attempt to increase daylight penetration

<table>
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<tr>
<th></th>
<th>JAN</th>
<th>APR/OCT</th>
<th>JUL</th>
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<td>0900</td>
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<tr>
<td>1200</td>
<td>-</td>
<td>N,E,S</td>
<td>-</td>
</tr>
<tr>
<td>1400</td>
<td>W</td>
<td>N,S</td>
<td>S,W</td>
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<tr>
<td>1600</td>
<td>E,S,W</td>
<td>N,S,W</td>
<td>S,W</td>
</tr>
</tbody>
</table>

SHARED SIDES:

NORTH=5
EAST=6
SOUTH=9
WEST=8

Protection from the cool weather

Ability to bring in sunlight helps with our psychological well-being and, more directly, our comfort during the cooler seasons. The shallow and low levels of the buildings and gradual height increase from north to south allow daylight penetration through interior spaces. Temperature control is achieved by placement of outdoor heaters at Passive Spaces, where people are expected to stay longer. Figure 129 shows the possible placement of outdoor heaters.

In reference to our cultural aspects of Auckland, people prefer the sun. The great sunny weather of summer holidays is definitely the most favourite time of the year. However, the circulation path and communal areas on the southern and western sides are most vulnerable to shading by neighbouring properties and proposed design. Figure 130 shows the sun analysis of the site. To maximise daylight penetration, two shallow water ponds have been implemented on the southern and western façades of The Restaurant as shown in figure 131. Sunlight from the northern side can therefore be reflected through. Furthermore, a lighter colour has been used for The Restaurant façade to increase the reflection. Rotated walls increases daylight penetration but are also vulnerable to the cooler weather.
Figure 129: Increase daylight penetration by aid of water feature
PROCESS OF WATER COLLECTION

1. RAINWATER COLLECTION
2. STORED IN ROOF SPACE. FILTRATED FOR USE IN THE RESTAURANT
3. TRAVELS DOWN THE INTERIOR WALL
   - VISIBLE FROM OUTSIDE
4. TRAVELS ALONG THE GLAZED CEILING
   - VISIBLE FROM INSIDE RESTAURANT
5. TRAVELS DOWN EXTERIOR WALL TO THE SMALL POND
   - REFLECTS SUNLIGHT
   - PHYSICAL ENGAGEMENT

Figure 130: Diagram of the water wall system
**Protection from rain**

Rain protection is achieved by a modulated shelter - The Shelter Covering (Refer to next chapter), which expands along the main circulation route and passive spaces. The modulating system is composed of diamond geometric units. Each unit has a central piece assigned for different purposes with a walk-able perimeter around the edge. The center piece of the unit is either glazed to allow daylight penetration or covered with mini therapeutic gardens.

**Protection from decreased vision**

The precedent examples and the survey results (refer to 2.3 and 4.2.2 respectively) concluded that people were most reluctant to use the space at night, implying the need for good lighting system to increase visibility. Lighting also has the ability to embellish any place. Different colours of lighting have been used at the Southern Communal Space, increasing the vibrancy of the area and inducing a sense of conviviality. Lights on the ground penetrate through the glazed sheltering units and illuminate the circulation path on the shelter covering (refer to Figure 117-Render of Cinema Space). After hours activities have been encourage in Auckland City District Plan as it has a positive effect on security.
As mentioned in the literature review, the significance of Nature traces back to the origins of humanity (Refer to Chapter 2.2.1). Our bodies have an intimate relationship with Nature. It can decrease our stress levels and reduces tension in our muscles (Norman, 2009; Thompson & Travlou, 2007; Bell & Thompson, 2010). Water, trees, flowers, sunlight and earth form the basis of our requirements (Thompson & Travlou, 2007). The design proposition aims to fulfill all the above factors in response to provide a fully restorative setting. The effect of Nature cannot be classified as either convivial nor contemplative, but rather as both. For that reason, natural items have been dispersed throughout the whole design rather than only the transition zone (The Trellis Garden).

People who suffer from stress appear to benefit from greeneries and nature-related programmes. However, they do not willingly engage with such. By emphasising green segments along the main circulation route, users can unconsciously benefit from the positive effect that Nature brings. Ulrich, 1993; Bokalders & Block, 2010; Holl, Pallassma, & Perez Gomez, 2006 and Jencks & Kropf, 1997 all claims that the healing effect of nature is an unconscious process affecting our emotions. Greeneries include green passive spaces, where resting takes place, and active areas—where physical work is encouraged. Plantation also becomes a tool for climatic response. Vertical greeneries are placed on the façade of The Restaurant and The Complex to maximise visual contact; horizontal surfaces are limited in an urban context.
Figure 131: Shelter Covering derived from main circulation route and green spaces.
As discussed before, the mini therapeutic garden on the Shelter Covering stretches across the main circulation route creating ‘gardens through the sky’. Figure 133 shows the position of green space and Shelter Covering in regards to the circulation route. Figure 134 shows the possible types of plants that can be used, each displaying their respective therapeutic purposes. The idea is that even walking on the Shelter Covering, the unconscious engagement with nature is still maintained.

In considering our cultural and inherited biological traits, the water feature becomes an essential component. On the northern and western façades of The Restaurant, water features have been incorporated to elaborate upon Nature’s effect, to assist the aesthetic quality of the place, aid for climate control and to segregate noise level between the two atmospheres. (Figure 131 and 132).

Both enclosed buildings use timber as one of the main materials, supporting the notion of Nature. Roof planes are positioned as wing-like structures to resemble the idea of freedom and wildlife.
Figure 134: Materials palette for design. Uses a combination of sensory (convivial and contemplative) and functional materials (Transparency)
5.5.3 MATERIAL AND COLOUR

Materials, texture, colour and light contents play an important role to our feelings and emotion in a space (Clements-Croome, 2004). Most of the design displays traditional materials to reveal the true underlying beauty of age, history and the relationship with humans (Holl, Pallassma, & Perez Gomez, 2006; Jencks & Kropf, 1997). The rich texture of traditional materials directly enhances perception, smell and touch, while unconsciously enhancing sound by acoustic reflection within a space. Natural sound of expression from materials should be appreciated. The choices of materials are predominantly based on psychological responses for comfort (refer to materials chart in literature review). The design uses mainly a combination of timber, concrete and glazing for the buildings and perforated metal plates for the Shelter Covering.

Timber has been used for the exterior properties such as outdoor partitions in the gym, rotatable walls in The Restaurant and the ground floor louver system. The timber use on The Complex has a heavy and darker tone in contrast to the light and airy walls of The Restaurant. The preference of warm and cool colour shades by the two user groups have been justified in the literature review. The use of timber concentrates highly on the convivial side, inducing the feeling of warmth and a cozy atmosphere. Figure 137 shows the material composition of the design.
The structure of the building and some exterior components such as the top level louvers use concrete in an attempt to merge the materials palette of the neighbouring properties. Appearances should blend in with local context in response for cultural consideration. The use of concrete concentrates highly at the Contemplative side, inducing the feeling of cool and calming atmosphere. The most Contemplative space on site is the Gallery, which uses a dark, unfinished concrete texture to evoke a calming essence through the tone and echoes of sound. Spot lights create contrasts of light and dark, generating distinctive textures to enhance touch and perception. The distinct contrast of light and dark replicates through the whole site by scattered shadows created from the Shelter Covering to enhance a sense of touch and perception (Mistry, 2009).

Although glazing is a contemporary material that has raised questions about its values to architecture, it still remains one of the most utilised materials to allow outdoor engagement. Most of the glazing has been used for vision towards the center of the site. Glazing on the ground level and perforated metal plates of the Sheltering Covering are used to achieve a clear perception across the whole site. The hard edges of glass and steel have been softened by the use of wood.
CONCLUSION
6.0 Conclusion

The problem with urban redundancy and poor development issues has always been a concern to cityscape. Pocket parks may be delightful in themselves, but they do not meet the more important needs of urban dwellers. Contemporary urban spaces emphasise benefits for the city rather than for the people. Hence, they fail to address the needs of users.

The design thesis concluded that well-being can be restored through utilisation of Restorative Urban Pockets. This typology derived from improvement of current urban spaces and manages more complex issues of space and well-being, addressing a bigger implication of the need for such spaces. The coexistence of both contemplative and convivial spaces is a fundamental principle to restoring a sense of well-being within the urban realm. By insertion of these two atmospheres, we can address the needs of the main social groups of urban users to relieve the existing tension. This was demonstrated through the design proposal by creating and enhancing different qualities of space. The transition and overlapping of the two atmospheres recognise the sophistication of urban spaces in response to human needs. Levels of conviviality and contemplativeness are induced by the contents of programmes and atmospheric conditions. Communal spaces and facilities can therefore be inserted according to these values of intensity.

Key references suggest the need for either contemplative or convivial sectors. ‘Convivial Urban Spaces’ (Shaftoe, 2008) and ‘Cities for People’ (Gehl, 2010) were two of the main references in this thesis. The principles and ideas that they proposed converge to conclude that convivial atmosphere is the ideal urban space for people. In contrast, landscape-based research such as ‘Open Space: People Space’ (Thompson, Travlou, 2007), and ‘Researching Landscape and Health: Open Space: People Space 2’ (Aspinall, Bell and Thompson, 2010) consolidates contemplative principles to restore physical and mental health. While these spaces aid to revitalise well-being for some, it does not offer a fully restorative experience for all. We have to recognise the diversity of urban users: it is insufficient to provide for one or the other. Despite the gap, an extension of their research to amalgamate the two seemingly opposing ideas would definitely be more effective for this typology. The findings have significant implications for research in the field of communal urban spaces, which previously has been ineffective in resolving issues of well-being. Since current urban spaces do not place adequate prominence on well-being, the quality of the urban lifestyle has always been considered as impoverished. The term “urbanisation” is notorious for its living conditions. By changing the way we experience communal urban spaces and adhering to Restorative Urban Pockets, we can revise and improve the notion of urbanisation, at least in regards to well-being.
The design proposition successfully validates my hypothesis and uncovers the basis for restoring urban settings. Future research could elaborate on my findings to develop propositions with more diverse parameters that suit various sites, while retaining the underlying principles of well-being. In reference to Shafteu’s statement that successful urban spaces should consist of a few connected areas, research may also the development of more Restorative Urban Pockets throughout the city and the interconnection between each hub to create a network of restorative nodes.


### Appendix A: Analysis and selection of Auckland Precedent Examples

<table>
<thead>
<tr>
<th>Auckland Examples</th>
<th>City</th>
<th>Size</th>
<th>Context</th>
<th>Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Britomart Place</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Myers Park</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Mahuhu Ki Te Rangi Reserve</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Parnell Place, Ruskin Street</td>
<td></td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wynyard Quarter</td>
<td>Y</td>
<td></td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
Appendix B: Top 3 Potential site for design development

UNMAINTAINED CAR PARK, SYMONDS STREET
1. Please provide some of your personal information for this survey ONLY. Information will remain private under all circumstances.
   • Name:
   • Age:
   • Gender:
   • Ethnicity:
   • Home location (street address):
   • Work location (street address):
   • Email address:

2. Why are you living (or did you live) at your location? Tick as many
   • Close to work and education
   • Close to facilities and recreational services
   • Affordability
   • Quality Living

3. Are you satisfied with your living environment? (Your neighbourhood)
   • I am satisfied in every way
   • Security and safety issues
   • Lack of green areas
   • Lack of communal public spaces
   • Lack of facilities (Necessity and recreational purposes) What sort of facilities are lacking? (such as convenient store, cafe, restaurant etc) Please List

4. If communal public spaces (Place to relax with urban furniture and facilities) were to be proposed in your immediate environment, how and why would you utilize such spaces? Tick as many
   • Individual time for relaxation and leisure
   • Socializing with others
   • During lunch breaks only. Place to eat
   • If they have suitable facilities and or activities

5. Is there any time of the day or seasons of the year that discourages use of the space?
   • During winter season
   • At night
   • During or after rain
   • Others: Please specify

6. How safe do you feel in the following redundant spaces?
   • No problem with it
   • Moderate
   • Not safe
   • Threatened
7. What activities do you enjoy doing in your leisure time that makes you feel joyful and relaxed?
- Watching a movie
- Having coffee with friends
- A place to sit and chat with some friends
- Quiet place for individual relaxation
- Shopping or cruising around
- Daily routine exercise such as aerobics, tai chi, running etc
- Sports
- Read
- Others: Please specify

8. Would you engage in any of the following activities in your leisure time if they were available in your communal open spaces? Tick as many
- Gardening and harvesting crops, ability to produce and sell
- Market stalls
- Enjoy art or music performances
- Others: Please specify

9. What do you think of the green spaces around your immediate living environment?
- There are plenty
- Satisfied with it, there is enough
- There is not enough
- There are some, but not well maintained
- There are none around
IF ONLY YOU COULD CHANGE YOUR ENVIRONMENT...

YOUR URBAN SPACE

please participate a 2mins survey before 19May at http://www.surveymonkey.com/s/VDMCPX9
tell us what YOU need, what YOU like, what YOU want!
### Appendix E: Initial Possible Programme List

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<th>Indoor?</th>
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</table>

**Community Gardens**

- Vertical Gardens (existing façade dvlp)
- Private space
- Individually arranged furnitures
- Deckings for sight-seeing

**Social Space**

- Small group spaces with furnitures
- Picnic tables
- Deckings for sight seeing

**Flexible**

- Performance stage, small arena for music/art performances ✓ ✓ ✓
- Market Stall ✓ ✓ ✓
- Space for group exercise ✓
- Outdoor Mobile cinema ✓ ✓

**Optional**

- ✓ Bookstore ✓ ✓ ✓ ✓ ✓ ✓ ✓
- Bike stand, station ✓ ✓ ✓ ✓ ✓ ✓ ✓
- ✓ Boutique ✓ ✓ ✓ ✓ ✓
- ✓ Video store ✓ ✓ ✓ ✓ ✓ ✓