THE POCKET VILLAGE

It takes a whole village to raise a child...
- Anonymous

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A Research Project submitted in partial fulfilment of the requirement for the degree of Master of Architecture Professional

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This project attempts to define a new typology to assist the maturation of adolescence in New Zealand; by exploring the architectural consequences of the worldwide cultural milieu of a village structure.

In modern society, a successful adult is often defined by their educational and occupational achievements. They are able to take care of one’s self and are able to take on many responsibilities. These are strongly influenced by the cultural environment, which ultimately highlights the goals for adolescents to strive for. However, there are some adolescents, typically from low socioeconomic backgrounds, that do not achieve a successful outcome during the vital years of the maturation process. A village for youth to live, learn and work with guided autonomy and responsibility might be a possible social tool to augment their transition into adulthood.

Similar to a youth centre, there are communities that are in need for facilities that can help adolescents who come from low socioeconomic families. However in some circumstances, the bare provision of youth centres is not enough to attract the youth of the community to voluntarily partake in activities.

Therefore, a common interest has to be identified as the driving force. This project will take on the architectural characteristics of the village structure and the applied chosen programmes. They will act as a catalyst that will attract and assist the development of the youth.

There are generally three stages during adolescent development; early, middle and late adolescence. The stages involve physical, cognitive and social-emotional development. It is important for this project to be aware of these developing parts. Therefore, the village must offer a healthy environment for the social-emotional development of the youth. The village must offer programmes that cater to the physical and cognitive areas of their development.

The study hopes to produce a youth environment that allows youth to develop into mature adults with self-confidence, ambition and willing to take on responsibilities to prepare them for the future.
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Figure 1: Painting of the main characters from the movie ‘The Goonies’ (1985) by Jim Hance
1. Introduction

This thesis attempts to produce a new social context in response to the issues of inadequate maturation in adolescence. The research attempts to cumulate chosen precedents, literature studies and site analysis to help define a new social environment for adolescent development. The research focuses on adolescents that may have lacked a healthy social and emotional background during childhood.

Main Research Question:

- How can architecture provide a social setting that fosters the development and maturation of adolescents?

Sub Problems:

- Why do we need a new social context for the development of adolescents in New Zealand? If so, who will fund such a place?

- What makes the worldwide cultural milieu of a village structure suitable for the development of adolescents? Why would this be a successful solution to providing a growth environment for adolescents? What are its characteristics?

- What type of context is appropriate for this Village and why is this appropriate?

- What type of programme will be provided for the development and maturation of adolescence in a village? And why is this appropriate?

David Fergusson from Christchurch School of Medicine\(^1\) produces important research on conduct problems. Fergusson explains how conduct problems in childhood and adolescents have profound consequences for later development including antisocial behaviour, crime, mental health difficulties, suicidal behaviours, substance abuse, teenage pregnancy, inter-partner violence and physical health.\(^2\)

Fergusson further explains that conduct problems are developed by low standards of living and socially disadvantaged backgrounds,

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1. David M. Fergusson, “Childhood Conduct problem,” in Improving the Transition, A report from the Prime Minister’s Chief Science Advisor (Crown Copyright 2011, Office of the Prime Minister’s Science Advisory Committee), 59

2. Ibid
producing the risk of adolescents failing in high school. Factors such as socioeconomic status, household income, neighbourhood characteristics, school factors and the adolescent’s peer groups are all conducive to conduct problems in adolescents. The village attempts to provide a healthy social environment for early adolescents (age 13-18) to help prevent poor conduct development.

Contemporary research on children growing up in ‘non-traditional’ family forms has raised questions about the capacity for these families to provide for a child’s best interests. The dominance of the conventional nuclear family continues to decline in New Zealand. Therefore it is important that data on the diversity within families is examined in relation to how this affects the life chances of a child growing up in these different structures.

As Beverly J. Wilson and John M. Gottman note: “Relationships within the family may be the most intimate and influential influence in the lives of individuals.” However, the broader ecology (the economic, social and physical surrounds) regulates the circumstances of the family and in turn, parent interactions with their children. Patricio Cumsille and Norman Epstein suggests that an absence of supportive social networks and local services such as schools and childcare can have an effect on parental stress, mood and behaviour; which then directly affects the child’s immediate environment.

Sharon Lynn Kagan and Bernice Weissbourd both suggest that social support for families has shown to reduce family stress. It enables maintenance of quality parenting in the face of socioeconomic stressors. The village will act as an alternative social support for families. This study will offer a cross section on youth facilities using case studies in order to define the impacts of extra familial growth on the transition from adolescence into adulthood.

Psychologist Dr. Joseph Allen and his wife Dr. Claudia Worrell Allen

produce a useful insight into troubled teens in their book Escaping the Endless Adolescence.\(^7\) Their research is based in North America on real life cases with troubled teenagers that they personally interviewed. Allen highlights in his book the solutions that can help reduce conduct problems in adolescence.

Allen talks about a few students taking part in a program called Teen Outreach.\(^8\) Through evaluation the program produced surprising and remarkable effects in changing young people’s lives. Teen Outreach highlights important issues for helping adolescents to mature. Ultimately the program allowed students to work voluntarily in an adult work environment alongside experienced adults. This allowed them to discover their capabilities in such a way that they felt “it’s a good thing I was there!”

Therefore this project attempts to follow a similar program to Teen Outreach, where trained professionals can provide community work for adolescents to aid in their maturation process. This programme together with the possibility of using the successful worldwide cultural milieu of a village may be beneficial to the community and its existing record of poor adolescent maturation processes.

In summary, this project hopes to assist development into adulthood during early adolescence, by providing a village structure where teenagers can experience adult-like work and form healthy adult social relationships. The village allows them to develop social skills and take on more responsibilities – in a similar manner to the village structure of many cultures worldwide.

Adolescents face a range of developmental issues. Living becomes a significant step towards the transition to adulthood. While youth with intact families may struggle to achieve self-reliance, youth in out-of-home care face formidable obstacles. However, there is promising evidence that proves that independent living programs serve as a facilitator for youth maturation.\(^9\) The village therefore also attempts to provide an alternative living space for young people that are approaching adulthood (age 18-21).

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8 Ibid, 97
Adolescents who choose to live in the village will be guided by trained professionals in helping their transition to adulthood and living independently. This allows adolescents to experience adult work, social relationships and consequences in a more tolerant environment than the real adult social environment. This will provide a stepping stone for the youth to mature into adults in the ‘real’ world.

The research by design will attempt to define a new social context as an appropriate architectural typology for healthier adolescent development.

The village through design will use precedents and literature such as A Pattern Language by Christopher Alexander et al. This book consists of 253 patterns which analyse architectural issues from the macro scale to the micro scale. Selections of architectural patterns that are appropriate to the problem will be selected. E.g. teenage society, masters and apprentices, and small work groups.

Alexander’s chapter on Teenage Society discusses creating an institution based on the model of a miniature adult society for adolescents. He suggests that adolescents should be able to take on most of the responsibility of learning and social life, alongside clearly defined forms of consequences. The institution will provide adult guidance both for the learning and the social structure of the society. This is a crucial design phase for this project as it focuses on the same ideas.

Figure 2: Sketch of Christopher Alexander’s ideal Teenage Society
Introduction

His section on Masters and Apprentices[^12] talks about the importance of working and learning. It is important for students to understand the teacher by physically engaging with the provided knowledge. This can only happen with a small working group of students. This allows the teacher to engage with each student. This is important when designing a proper workspace between the adult professional and the adolescents.

[^12]: Ibid, 412

Small Work Groups[^13] discusses the recommended number of people in a workspace in order to produce the most productive working environment. This will be important when designing a work space large enough to accommodate said amount of people.

[^13]: Ibid, 702

Figure 3: Simple diagram of Alexander’s Masters and Apprentices

Figure 4: Simple sketch of Alexander’s Small Work Group environment
Figure 5: Painting of a troubled adolescent (2008) by Sunny Lo
2. The Adolescent

The Adolescent can generally be defined by three stages: early, middle, and late adolescence (Figure 7). The social-emotional development of adolescence often causes anti-social behaviour, depression and sometimes lead to suicide.\textsuperscript{[14]} However the reasons behind suicide can be complex.

The main social-emotional issues are as follows:

2.1 Self-concept

Social changes involve the individual to develop a new concern known as ‘self-concept’; giving rise to a determined ‘preoccupation with who he is’.\textsuperscript{[15]}

2.2 Ego and Identity

Erik Erikson’s\textsuperscript{[16]} concept of ‘ego and identity’ involves seven elements; a sense of self – an interior knowledge of what one is; a sense of uniqueness – and recognition of one’s separate identity; self-acceptance; role expectation – the acquisition of appropriate interpersonal, sex, vocational roles; a feeling of stability or permanence about oneself; goal directedness – knowing where one is going or what one is going to do; and interpersonal relations which permit interaction and involvement with others.

2.3 Emotional Instability

David P. Ausubel\textsuperscript{[17]} believes that ‘the problem of emotional instability is the core problem of adolescence’. It cuts across practically every major manifestation of adolescent behaviour. In general terms, the problems of the adolescent reflect the changes taking place within oneself – physiological, hormonal etc. And interpersonal and society changes taking place outside oneself, because of the internal and chronological development one is experiencing.

2.4 Depression

Adolescents are aware of their increasing responsibilities – of their

\textsuperscript{[14]} American Psychological Association, Developing Adolescents: A Reference for Professionals (American Psychological Association, 2002) 13
need to make decisions about education, employment, interpersonal relationships etc. They start to desire independence and become discouraged when their independence is not allowed. They often feel hesitant about forsaking the pleasures of childhood. Frequent decisions to be made can cause them to withdraw into depression or revert to childish behaviour. Ruth Strang\textsuperscript{18} has suggested that the adolescent’s temporary image of himself is often one of depression.

# The Adolescent

## Stages of Adolescent Development

<table>
<thead>
<tr>
<th>Stages of Adolescence</th>
<th>Physical Development</th>
<th>Cognitive Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Early Adolescence</strong></td>
<td>• Puberty: grow body hair, increase perspiration and oil production in hair and skin.</td>
<td>• Growing capacity for abstract thought</td>
</tr>
<tr>
<td><strong>Approximately 11 – 13 years of age</strong></td>
<td>Girls – breast and hip development, onset of menstruation</td>
<td>• Mostly interested in present with limited thought to the future</td>
</tr>
<tr>
<td></td>
<td>Boys – growth in testicles and penis, wet dreams, deepening of voice</td>
<td>• Intellectual interests expand and become more important</td>
</tr>
<tr>
<td></td>
<td>• Tremendous physical growth: gain height and weight</td>
<td>• Deeper moral thinking</td>
</tr>
<tr>
<td></td>
<td>• Greater sexual interest</td>
<td></td>
</tr>
<tr>
<td><strong>Middle Adolescence</strong></td>
<td>• Puberty is completed</td>
<td>• Intense self-involvement, changing between high expectations and poor self-concept</td>
</tr>
<tr>
<td><strong>Approximately 14 – 18 years of age</strong></td>
<td>• Physical growth slows for girls, continues for boys</td>
<td>• Continued adjustment to changing body, worries about being normal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Tendency to distance selves from parents, continued drive for independence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Driven to make friends and greater reliance on them</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Feelings of love and passion</td>
</tr>
<tr>
<td><strong>Late Adolescence</strong></td>
<td>• Young women, typically, are fully developed</td>
<td>• Firmer sense of identity</td>
</tr>
<tr>
<td><strong>Approximately 19 – 21 years of age</strong></td>
<td>• Young men continue to gain height, weight, muscle mass, and body hair</td>
<td>• Increased emotional stability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increased concern for others</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increased independence and self-reliance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Peer relationships remain important</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Development of more serious relationships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Social and cultural traditions regain some of their importance</td>
</tr>
</tbody>
</table>

Figure 7: Table on the stage of adolescent development, adapted from the American Academy of Child and Adolescent’s Facts for Families, 2008
Figure 8: ‘A Helping Hand’ by anonymous
3. Improving the Transition

The passage from childhood to adulthood is complex and in New Zealand a large number of children do not make this transition easily. The Office of the Prime Minister’s Science Advisory Committee (PMCSA) wrote a report titled *Improving the Transition*[^19] which confirmed an unacceptably high rate of adolescent morbidity amongst young New Zealanders compared with those in other OECD nations.

By OECD standards the standard of living of New Zealand youth is relatively poor with average family incomes low and child poverty rates high. New Zealand ranks fifth amongst OECD countries for rates of teenage pregnancy and those under 25 at a high risk of contracting sexually transmitted infections. New Zealand also has the highest rate of youth suicide between the ages of 15-19 among OECD countries. The OECD report released in 2009 entitled *Doing Better for Children*[^20] gives a range of comparative figures that suggest that young New Zealanders are at greater risk than those of virtually any other nation we would want to compare ourselves with.

Based on international evidence, the OECD suggests that the government should spend a significant amount of money for New Zealand youth. The report concludes that spending more on adolescents is more likely to bring about positive change and bring about more equality for those who are disadvantaged.

This project attempts to produce an architectural solution that may be able to decrease the rate of adolescent morbidity in New Zealand.

3.1 Social and emotional competence

Social and emotional competence is one of the most important developmental objectives for the successful transition into adulthood. Youth who do not have a healthy social and emotional development are most at risk for producing conduct problems during adolescence.[^21]

Over the past decade international comparisons have shown that young children are most at risk for maltreatment and infant mortality.


New Zealand in particular is falling far behind other OECD countries in the care and protection of their young.[22]

Adverse childhood experiences including exposure to violence and other risk factors such as low-income can be related to chronic childhood illnesses, which can in turn lead to future mental and physical health problems during adulthood.[23]

3.2 Childhood conduct problems

Conduct problems in childhood and adolescence have profound consequences for later development including antisocial behaviour, crime, mental and physical health difficulties, suicidal behaviours, substance abuse, teenage pregnancy and violence. The project attempts to minimize and prevent these issues by providing a healthy social environment.

There is no single factor that explains why some adolescence develop significant conduct problems while others do not. Evidence suggests that conduct problems are the result of an accumulation of factors that come together to encourage the development of antisocial behaviours. Of those most commonly documented include the following:

3.2.1 Socio-economic factors

Childhood conduct problems tend to be higher amongst families facing sources of social inequality and deprivation including poverty, welfare dependence and reduced living standards.[24]

3.2.2 Family

The nature and quality of a child’s family environment plays an important role in the development and maintenance of conduct.[25] In particular, children reared in homes characterised by multiple sources of hardship including family violence, child abuse, inconsistent discipline practices and multiple changes of guardianship can be exposed to substantially increased risk of developing conduct problems.

References:


3.2.3 Schools
Maughan Rutter points out that children spend around 15,000 hours at school a year.[26] Therefore the nature and quality of the school environment play an important role in shaping a child’s behaviour. Growing evidence suggests that schools that offer consistent, non-punitive supportive environments reduce the risk of conduct problems.[27]

3.2.4 Peers
The nature and quality of adolescent peer relationships play an important role in shaping behaviour; peer influence is very important during adolescence. Associating with antisocial and drug-using peers can lead to the onset of conduct problems in young people with a previously unproblematic life history.[28] The role of peers in the development of conduct problems has been clearly identified by Terrie Moffitt[29] on the basis of her work with the DMHDS (Dunedin Multidisciplinary Health and Development Study).

Moffitt identified two distinct views by which conduct problems develop. The first is the ‘life course persistent pathway’. Adolescence who follows this pathway show signs of nonstandard behaviours very early in development which continue over the life course.[30] Moffitt suggests that this pathway includes young people who have neuropsychological deficits and who are exposed to dysfunctional childhood environments.

The second pathway is the ‘adolescent-limited pathway’. Young people who follow this pathway typically do not show significant conduct problems until adolescence; they develop conduct problems by imitating the behaviours of antisocial peers. Unlike the life course

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28 Lindley Bassarath, “Conduct disorder: a biopsychosocial review,” *Canadian Journal of Psychiatry*
31 Ibid
persistent counterparts, individuals who exhibit adolescent-limited antisocial behaviour typically outgrow these behaviours by early adulthood.\cite{32}

### 3.3 Overview

What emerges from this literature survey is that the development of childhood conduct problems is the conclusion of a large number of sociological, family, peer and personal factors which act collectively to affect the childhood and adolescent development. What protects young people from developing these problems is exposure to supportive and nurturing environments at home, school, and in other social contexts. In some cases, if the home and school is not enough, another social context is needed. Therefore this project attempts to create a new social context for adolescence, similar to the function of youth facilities.
4. A Youth Facility in a Village Structure

Youth centres can play an important role to the wider community. They offer the youth a location to congregate in order to participate in recreational and educational activities. A place where they can obtain knowledge from professionals, learn a specific skill, socialise with peers and participate in volunteer programs. A youth centre is also a place where young people from difficult social backgrounds can gather in a healthy and safe influential environment; in the hopes of preventing poor behavioural development.

Architectural strategies are essential to the design of a youth centre. Strategies in creating a positive and functional space for the applied activities and the social engagement of the participants is key. The project attempts to create a youth centre in the form of a village (youth village) as the architectural consequence.

The belief of the cultural milieu of a village structure is the synopsis of the research in order to generate a positive environment for adolescents. Unfortunately, this typology of youth centre is uncommon. Therefore an accumulation of literature and precedents will be needed. This section will attempt to answer:

- why would this be a successful solution to providing a growth environment for adolescents?
- what are its characteristics?
- why is it a context for successful social maturation?

This section will also include the discussion of chosen precedents. Discussing their strategies that suggest a good environment for young people. It is important to consider strategies that can be applied into producing a youth village.

4.1 Characteristics of a village

This section attempts to clarify the fundamental characteristic of a village. A village is often known as a settlement type. An idealised village, in which the houses cluster around a central church can be classified as a nucleated village. A nucleated village is one of the main types of settlement pattern. It is one of the terms used by landscape historians to classify settlements.\(^3\) One example of a nucleated village

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in England is Shapwick\textsuperscript{[34]} in Somerset. The village is carefully arranged by a collection of smaller buildings. The church is the main building in these traditional villages and is the functional core of the settlement.

Therefore, the structural characteristics of a village is a collection of integrated small buildings. Christopher Alexander in his book \textit{A Pattern Language} describes this type of characteristic as a building complex.\textsuperscript{[35]} Alexander suggests that the overall effect of a building complex is to foster a healthier social environment as opposed to the depersonalised environment created by monolithic buildings.\textsuperscript{[36]} His argument is supported by a report from a survey of visitors to public service buildings in Vancouver, British Columbia.\textsuperscript{[37]} The study shows that the degree to which a building is broken into visible parts affects the social contact amongst people in a building. For the psychological health of its residents it is vital that the design process of the youth village will take this into account.\textsuperscript{[38]} A group of huts in an African village is a good example of this because it too is comprised of a multitude of small buildings surrounding the main hut, typically belonging to the


\textsuperscript{35} Christopher Alexander et al., \textit{A Pattern Language: Towns, Buildings, Construction} (New York: Oxford University Press, 1977), 469

\textsuperscript{36} Ibid, 470


\textsuperscript{38} Alexander, 471
A Youth Facility in a Village Structure

The development of a child/adolescent into adulthood is strongly affected by their social background. Therefore the characteristics of a youth village structure must involve an architectural strategy that will generate a positive social environment.

4.2 Creating a youth village

This section provides chosen precedents of youth centres and explores the important characteristics of a social environment for young people. Their highlighted strategies will be considered in the design process of the youth village.

Figure 10: Alexander’s sketch on the Building Complex strategy

Figure 11: Apprentices, 1906. Photo: Potrero Hill Archive Project

39 Ibid
4.2.1 Youth Center of Qingpu by Atelier Deshaus

The Youth Centre located in Qingpu (YCQ)\textsuperscript{[41]}, Shanghai, China is designed in the form of a building complex. However, Deshaus uses a planning structure similar to a small town settlement; creating a miniature ‘youth town’ (figure 12). The collection of smaller buildings is connected by paths, stairs, and bridges; similar to a network system (figure 15).

Each building is designed for its programme. They are identifiable due to their space, function and character (figure 13). The division of the buildings utilize various types of open spaces such as courtyards, plazas and lane.\textsuperscript{[42]} The centre comprises of one particular large courtyard space for communal activities.

YYCQ suggests that a building complex (in this case a small town) can provide a healthy social environment for teenagers.\textsuperscript{[43]} This project will take on a similar strategy.


\textsuperscript{42} Ibid

\textsuperscript{43} Ibid
Figure 13: Cross section elevation drawings of YCQ. The spaces are dentifiable due to their space, function and character.

Figure 14: Elevation drawings of YCQ, showing the varying heights of each building. Similar to a small town
Figure 15: Ground plan of YCQ, showing the collection of smaller buildings connected by paths, stairs, and bridges (red).
4.2.2 Fai-Fah by Sparch
Fai-Fah is a youth centre in Bangkok, Thailand. The programme works with underprivileged children and teenagers in their community using the arts as a vehicle for self-development and creative thinking.[44]

The centre is a restoration project of two shop houses located in a residential district of Bangkok. The art and creative education programmes have been distributed over five floors. This contradicts the building complex strategy. However, the idea of highlighting itself within its community is worth noting.

The facade has been transformed by the application of a bespoke lattice screen and Fai-Fah logo (figure 16), a statement that the building is different from its adjacent neighbours.[45] The building also uses a bright colour ‘yellow’ on the separation walls, creating a strong contrast to the adjacent buildings (figure 17). This strategy emphasizes the building is unique within the community and its use of colour is eye catching. A visual method in attracting young people.

The five levels of the building (figure 18) are linked by a central feature staircase with each level defined by its own colour theme.[46] This idea can be beneficial to the identification of each building by applying different colours. The central staircase acts as a spine to the building, allowing a main pathway to all the activity spaces. A clear pathway is essential in all planning situations.

However, due to the limited building area there was insufficient space for a main courtyard. This was substituted by a roof terrace to provide a large communal activity space (figure 22).

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46 Ibid
Figure 16: Lattice screen and Fai-Fah logo.

Figure 17: Bright colour ‘yellow’ on the separation walls, creating a strong contrast to the adjacent buildings.
Figure 18: Cross section elevation drawing of Fai-Fah, showing the central feature staircase with each level defined by its own colour theme.
A Youth Facility in a Village Structure

Figure 19: Ground floor plan

Figure 20: First floor mezzanine plan

Figure 21: Forth floor plan

Figure 22: Roof plan, showing roof terrace
4.2.3  Sjakket Youth Club by Plot

The Sjakket Youth Club serves a significant role in the area, because it prevents youth from loitering in neighbourhoods and educates them.\(^47\) Sjakket is situated in one of the outer lying neighbourhoods of Copenhagen, in an industrialized neighbourhood which is mainly populated by lower income households similar to Fai-Fah.\(^48\) This suggest that a youth centre is often needed in poor socioeconomic environments.

Similar to YCQ, a range of different activity and educational spaces are needed to accommodate each programme. The centre’s multi-functional characteristics is best illustrated through the varied use of the vaulted spaces. One is held completely empty for sporting events and the other one can be used for activities (figure 25) such as concerts or communal activities.\(^49\) Therefore some spaces need to be versatile in order to allow for different activities.

The former industrial buildings serve as a backdrop to the more current urban street culture as seen in the preserved graffiti and the rich use of colour throughout the building (figure 28). Instead of removing the graffiti it became a source of inspiration to the colour scheme. The exterior windows each have a different tone of colour (figure 29). Similar to Fai-Fah, the method of using colour is important in youth centres.

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48 Ibid
49 Ibid
A Youth Facility in a Village Structure

Figure 23: South Elevation

Figure 24: East Elevation

Figure 25: Ground plan
Figure 26: Cross section elevation

Figure 27: Longitudinal section elevation
Figure 28: Former industrial building, showing current urban street culture as seen in the preserved graffiti

Figure 29: Exterior windows each have a different tone of colour
4.3 Overview

Through the discussion on each youth centre mentioned above, a few important characteristics are worth considering in the design process. The characteristics are:

- The building complex strategy; a collection of smaller buildings connected by paths, stairs, and bridges. Similar to a network system
- Outside activity spaces; such as courtyards and recreational spaces
- Some spaces must be versatile in function for various communal activities
- A selection of programmes is often applied in youth centres; therefore several building designs will be needed
- The use of colour is important for emphasizing the significance of the facility in the community. It is also an opportunity to bring young cultural artworks to the premise. A method in attracting young people
- Poor socioeconomic communities; this is important to the site selection process; the precedents highlight the need of youth centres in these common areas
Figure 30: Image of a building facade made by recycled glass bottles during the World Wars as well as the post-War periods, due to economic benefits and shortage of materials.
5. The Importance of Recycling for our Youth

Recycling is a widely discussed topic in today’s society. It is one of the most popular methods for a positive impact on the world. At the rate at which the world’s population is increasing we would not be able to sustain the amount of resources that the planet has. If there was no recycling then we would run the risk of losing various wildlife habitats, everyday resources and a higher risk of death from pollution and toxic gases. Research suggests that by the year 2018, United Kingdom will have no more space to bury waste.

Therefore the method of reusing materials to preserve resources and space is essential. It is important to generate a recycling mindset on our youth. In essence they are the future to finding new ways to preserve their living environment.

There are many architectural strategies today that deal with recycling. The ‘green’ premise is growing in popularity across the globe.

Many architectural projects today are using cargo container structures as a means of recycling. There is an extremely high surplus of empty, unused shipping containers around the world parked on shipping docks. This is due to the outflow cost for suppliers to ship empty containers back to their origin. In most cases it is cheaper to buy new containers from Asia.

There are copious benefits to the so-called shipping container architecture model. A few of these advantages include: strength, durability, availability and cost. The abundance and relative cheapness of these containers during the last decade comes from the deficit in manufactured goods coming from North America. Much freight is now shipped overseas in containers of standard sizes (Appendix A, Figure 4). The cargo container can be a cheap, innovative design and construction alternative for the village.

Phillip C. Clark filed for a United States patent described as a “method for converting one or more steel shipping containers into a habitable building at a building site and the product thereof.”

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52 Ibid
diagrams and information contained within the documentation of the patent appear to lay the groundwork for many current shipping container architectural ideas. Through the chosen methods in converting steel cargo containers into a habitable environment provided by Clark’s patent[54], they will act as an alternative design and construction method for the village. In order to promote a recyclable green environment this might be a good building technique that can be implemented in the design of the youth village.

5.1 The Cargo Container

The steel framing of the containers is very strong and are typically comprised of steel members and studs. The cladding of the containers can be associated with a corrugated steel box, meaning it can be trimmed and cut (usually by an acetylene torch). Each container includes two outwardly swinging steel doors on one of the back walls. It is important to keep the characteristics of the container as much as possible, clearly demonstrating the novelty of the structure.

5.1.1 Combining and stacking containers

Individual containers can create awkward living/working spaces. However, Clark illustrates the possibility of connecting two containers together (Appendix A, figure 1) in order to form spaces for living and working.

Each container will need insulation, which with using only one cargo container can result in a long narrow box with less than eight foot ceiling. To make an adequate sized space, multiple boxes are need to be combined. This is an important design aspect for most of the primary buildings in the village. However, individual twenty (20) foot container have been converted into successful small living spaces before, such as Cinco Camp by Rhotenberry Wellen Architect.[55]

Stacking the containers will be useful for multi-level building designs. Sugoroku Office by Daiken-men Architects in Gifu,[56] provides a

54 “Method for converting one or more steel shipping containers into a habitable building at a building site and the product thereof US 4854094 A,” accessed October 7, 2013, http://www.google.co.in/patents/US4854094


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clear understanding in combining and stacking containers in creating a office and liveable space. This unique container office consists of seven shipping containers which are held together by a steel mobile frame.

5.1.2 Openings
Clark also describes how cargo containers can be opened for windows and entries by cutting through the corrugated steel sheets of the end and sidewalls by a acetylene torch. This is important because light is a vital element for all living spaces. The openings will be installed with windows or sliding doors to allow light and ventilation throughout the building.

5.1.3 Insulation and add-ons
Based on the material of the cargo containers they would be uncomfortable, dark and cold to live in without proper insulation or add-ons. Clark suggests that the standard of living in the containers can be improved with the installation of thermal insulation, decorative inside walls, weather-resistant exterior coverings (such as roofing, louvers, heat dissipating panels etc) plumbing, electrical service, lighting, interior stud walls, etc. These methods are no different to typical corrugated construction normally used in commercial and/or residential construction. There are a wide range of thermal insulation that can be used for cargo container architecture e.g. spray-on insulation, roll-on insulation, blown-in insulation, and loose-fill insulation.

5.1.4 The Downside
There are a lot of downsides to building with cargo containers. For example, the coatings used to make the containers durable for ocean transport also happen to contain a number of harmful chemicals such as chromate, phosphorous and lead-based paints. Moreover, timber floors that line the majority of shipping container buildings are infused with hazardous chemical pesticides like arsenic and chromium to keep pests away.

58 Ibid
60 "Pros and Cons of Cargo Container Architecture”
61 Ibid
Reusing containers seems to be a low energy alternative, however, few people factor in the amount of energy required to make the box habitable. The entire structure needs to be sandblasted, floors need to be replaced and openings need to be cut with a torch or fireman’s saw.\cite{Ibid} The average container eventually produces a large amount of hazardous waste before it can be used as a structure.

### 5.2 Cargo Container Architecture

In many areas, it is cheaper and less energy to build a similarly scaled structure using wood framing. However, their use makes sense when resources are scarce and containers are in abundance. There are certainly striking and innovative examples of architecture by using cargo containers. The following section discusses a few chosen cargo container architecture projects, that may influence on the design of the buildings in the youth village.

\[
\text{Figure 31: Extremely high surplus of empty, unused shipping containers around the world parked on shipping docks, image by Ramon Llorensi}
\]
5.2.1 Future Shack by Sean Godsell
Recycled shipping containers are used to form the main volume of the building. A parasol roof is then packed inside the container. When erected, the roof shades the container and reduces the heat load on the building. Legs telescope from the container enabling it to be situated without excavation on uneven terrain. [63]

The building provides:

- Flexibility; as a base module the containers can be stockpiled for use on an ‘as required’ basis. They are designed to be transported by trucks, ships and trains - all infrastructure for the handling of the module is available worldwide [64]

- Self Contained; also packed within the container are water tanks, solar power cell, satellite receiver, roof access ladder, container access ramp and parasol roof. The basic container is also modified to provide thermal insulation to R4.0 and a series of openable vents allows the free flow of fresh air. [65]

- Ablution; each module has the capacity to be fitted with bathroom /kitchen depending upon local requirements. [66]

- Mobile and reusable; Future Shack can be packed back into itself and relocated or stockpiled for future use. [67]

It is therefore legitimately described as fully recyclable and fully self sustainable architecture.

64 Ibid
65 Ibid
66 Ibid
67 Ibid
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Figure 32: Conceptual sketches of Future Shack by Sean Godsell

Figure 33: Photo of completed Future Shack
5.2.2  Cinco Camp by Rhotenberry Wellen

Five separate shipping containers make up Cinco Camp, in the middle of Western Texas.\(^{68}\) The shipping containers stack on four sockets. In this design, the sockets are used to raise the container on the four footings and to lift the metal canopy above the container.\(^{69}\)

A shed metal canopy hovers above each container and absorbs most of the heat. The remaining heat is dissipated by the wind currents that pass between the canopy and the container below. Each container is also equipped with an air conditioner box.\(^{70}\)

A window is cut out at one end of each container and the other end opens completely with full doors to provide ventilation. The containers can also close-up completely during the night or when not in use.\(^{71}\)

The containers had to be sandblasted in order to remove the logos of various shipping companies. Insulation and high density fibreboard was installed on the interior walls. To make small bathrooms, prefabricated shower stalls and HDF cabinets were fitted inside.\(^{72}\)

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\(^{69}\) Ibid

\(^{70}\) Ibid

\(^{71}\) Ibid

\(^{72}\) Ibid
Figure 35: Section plan

Figure 36: Elevation (left) and exploded diagram (right) showing structural components
5.2.3 Sugoroku Office: Industrial Soul by Daiken-Met Architects

The Sugoroku Office is built from seven stacked shipping containers on three levels with two spaces left open for balconies. A mobile steel frame (figure 38) serves as the foundation. It provides support for the containers while reducing the structural load placed on them.

Circulation routes are installed on the outside of the containers to provide access all the way up to the 3rd floor (figure 37). The frame and containers can easily be dismantled, removed and rebuilt whenever necessary. The interiors of the containers are finished with used plywood or packing bands from a construction site.

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74 Ibid
75 Ibid
76 Ibid
77 Ibid
Figure 38: Sugoroku mobile frame

Figure 39: Cross section elevation

The Importance of Recycling for our Youth
6. Site Selection Process

Adolescence can be extremely vulnerable in the early stages of development. The transition from youth to adulthood can be easily disrupted by factors such as poor standards of living, and broken families.

Conduct problems in childhood and adolescence can have profound consequences for development into adulthood. There is no single factor or set of factors that explains why some adolescence develop significant conduct problems while others do not. However, a majority of research suggests that the socioeconomic status of a family can often determine the child’s opportunities for education, occupation and social interaction. More privileged families are more likely to use reasoning and non-physical forms of discipline whereas lower-class families are more likely to use physical forms of punishment. Some teachers from the United States reported that children in such families were more likely to have behaviour problems and negative social relations with peers.

It is possible for adolescents to develop a street subculture mentality when they lack discipline from their family and the school systems. These individuals generally spend most of their time loitering around neighbourhoods or in towns. These individuals form into street gangs and are primarily male youths who often come from low-income families. These groups often cause juvenile crime in their community and are typically comprised of male youths between the ages of 14 to 18. Street gangs pose a serious threat to community safety because of their tendency for violence and a complete lack of concern for innocent bystanders.

Therefore, the ideal site for the village should be a place in New Zealand that consists of a high proportion of low income, broken families and broken homes. The location should also have a high proportion of low income New Zealanders, as well as a high proportion of New Zealanders with lower levels of education. Furthermore, the site should have a high proportion of New Zealanders who are unemployed and a high proportion of New Zealanders who are living in poverty. Finally, the site should have a high proportion of New Zealanders who are living in unhealthy environments. The site should be located in an area that is easily accessible and has good public transportation. The site should also be located in an area that is safe and has a low crime rate.

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78 Roberta M. Berns, Child, Family, School, Community: Socialization and support, (Belmont: Wadsworth, Cengage Learning, 2009), 99.
families and high juvenile crime rates. The village will provide a social and secure environment for adolescents who come from such backgrounds in order to keep them off the streets. This will be done in the hopes of providing them with options for a more successful future.

6.1 Glen Eden

Glen Eden is one of many areas in the Auckland region that consist of a large number of low socio-economic families. Auckland Council reported in 2010, increased offences of intimidating youth congregation and victimisation in the area. The article shows that this has created the perception that the Glen Eden township is not safe. Waitakere Ranges Local Board community safety portfolio holder Mark Brickell says this has impacted adversely on business in the town centre.[86]

There is ongoing support for the community with services such as Titirangi Baptist[87], Glen Eden Community House[88], LIFEWISE Community Service, VisionWest Community Trust etc. which help foster communal engagement within Glen Eden neighbourhoods. The current Urban Renewal Plan includes LIFEWISE Family Services.[89] LIFEWISE is a not-for-profit community and social development agency that provides services to vulnerable people of all ages and is initiating new ways to solve challenging social issues. LIFEWISE provides assistance to the social programmes of both Titirangi Baptist and the Glen Eden Community House. LIFEWISE would also be the major agency responsible for the future development of the Pocket Village in Glen Eden.

The general population of Glen Eden is younger than average with a large number of young families. This has created a demand for Early Childhood Education and youth facilities. There are six primary schools in the area including a Kura Kaupapa Maori and Hoani Waititi Marae. Therefore the Pocket Village may prove to be an essential facility for children that are approaching adolescence.

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6.1.1 Demographics

The LIFEWISE Glen Eden Project Report\textsuperscript{90} provides a comprehensive understanding on the social demographics of the area. It supplies raw data and provides the physical mapping of Glen Eden’s infrastructure.

There are five distinctive Census Area Units (CAU) - Glen Eden East Kaurilands, Woodglen, Tangutu and Parrs Park. These provide the basis for this demographic analysis.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{glen_eden_5_cau_areas}
\caption{Glen Eden’s 5 CAU areas. Map Supplied by Waitakere City Council (2010)}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{glen_eden_5_cau[:,:,0]}
\caption{Glen Eden’s 5 CAU areas. Map Supplied by Waitakere City Council (2010)}
\end{figure}

\textsuperscript{90} Sue Berman, The Glen Eden Project: Phase 1 (LIFEWISE Family Services, September 2010)
Population figures
The total population as reported at 2006 Census for the whole Glen Eden is 23,031.

The total population breaks down as:

<table>
<thead>
<tr>
<th>Census Area Unit</th>
<th>Usual Resident Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glen Eden East</td>
<td>6609</td>
</tr>
<tr>
<td>Parrs Park</td>
<td>6198</td>
</tr>
<tr>
<td>Woodglen</td>
<td>4206</td>
</tr>
<tr>
<td>Kaurilands</td>
<td>3063</td>
</tr>
<tr>
<td>Tangutu</td>
<td>2955</td>
</tr>
</tbody>
</table>

Glen Eden is a high growth area with significant population growth occurring between 2001 and 2006. In 2009, Waitakere City Council provided the below comment on the future growth of Glen Eden:

“This trend is likely to continue as the Growth Management Strategy for Waitakere City identifies Glen Eden as a growth node and anticipates that the population for Glen Eden (700m radius from Glen Eden station) will see increases of up to 75% around 2200 people when compared with the population at 2006”

This population forecast growth has important implications for the future development of new services in the area.

6.1.2 Social deprivation index
A Social Deprivation Index is a significant tool provided by the Waitakere City Council, which measures the social deciles rating of an area. Colour coded mesh blocks indicate areas of high or low social deprivation. This project focuses on the social issues around adolescents therefore this tool will be essential for determining the most appropriate area of development for this youth village.

“Social Deprivation Index is a measure of socio-economic status calculated for small geographic areas rather than individuals. The calculation uses a range of variables from the 2006 Census of Population and Dwellings which represent nine dimensions of social deprivation. The variables include Income, Employment, Support, Living Space and Home ownership”.[91]

[91] Waitakere City Council, 2010
Figure 43: 2006 Deprivation index - Glen Eden and surrounds, supplied by Waitakere City Council, 2010
The most deprived areas indicated by the 2006 Deprivation index are not concentrated within one area of Glen Eden but can be found almost evenly distributed amongst Glen Eden East, Woodglen, Tangutu, and Parrs Park. This suggests 4/5 suitable areas for the village.

### 6.1.3 Household and families

There are significantly more single parent households in the Parrs Park (29.7%), Woodglen (29.4%), Tangutu (26.2%) and Glen Eden East (25.4%) areas than on average across Waitakere City (21.2%). Between a quarter and close to a third of families in the Parrs Park and Woodglen areas identify as single parent families. This suggests that both Parrs Park and Woodglen will consist of demographics that have a higher chance of youth with behavioural and social problems within families.\[^{92}\]

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6.1.4 Household Income

The median household income for residents aged 15+ years across the CAUs is lowest in Glen Eden East at 20% of residents in Glen Eden East earning less than $20,000. Over 10% of Parrs Park and Woodglen residents also earn less than $20,000. This may be due to the area housing a higher than average senior citizen population. All areas (except for Kaurilands) have a median household income that is less than the average in Waitakere City ($58,500).
This also suggests that Glen Eden East, Parrs Park, and Woodglen have a higher rate of youth with poor conduct problems. Poor childhood conduct development tends to be higher amongst families facing issues of social inequality and deprivation including poverty, welfare dependence, poor living standards and related factors.\[93\]

6.1.5 Age of population

Age distribution data is useful for analysing the potential service needs of a community. Figure 47 indicates that compared with Waitakere City, Glen Eden’s CAUs house a younger than average population, particularly in the Parrs Park area. Glen Eden East has a higher than average older population. The following graph compares Glen Eden East and Parrs Park age distribution.

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Compared to Waitakere City:

- Glen Eden East has higher than average senior citizens and less than average number of preschool and school aged children.

- Parrs Park has a considerably higher preschool, school and youth group population. However, they have a below average adult and senior populations.

- Woodglen has a slightly higher than average preschool and school aged population with a higher than average young adult/adult population.

- Tangutu has a young population base with a higher than average primary school age group and a large adult population but a considerably small senior citizens population.

- Kaurilands has a below average preschool population but above average primary school population group. The secondary school and young adult population drops below average numbers, while adults in their 40’s are well above average. The senior population drops to below average.

6.1.6 Voluntary Work

Voluntary work is often unacknowledged or unrecorded. The graph below reflects those who spent “voluntary time in the last week” as an unpaid activity at Census 2006. The Glen Eden CAUs are active sites of voluntary activity.

![Figure 48: Helping or voluntary work for an organisation, group or Marae](https://example.com/figure48.png)
6.1.7 Education
High schools that are closest to Glen Eden are Kelston Boys High School and Kelton Girls College. Both Kelston schools are located next to Glen Eden East, however they are not considered to be within the borderlines of Glen Eden. 920 students are enrolled\(^{94}\) at Kelston Boys High School which is 348.8% more than the average amongst New Zealand schools. Kelston Girls College has 678 students enrolled\(^{95}\) which is 230.7% more than the average for all New Zealand schools. Locating the village close to these schools will be beneficial. The possibility of attracting troubled adolescents from these high schools for after school activities will expectantly prevent a majority from undertaking juvenile conduct.

6.2 Claywest Place
Based on the chosen demographic profiles Parrs Park and Glen Eden East are the two distinct areas that prove appropriate for the development of a village.

Glen Eden East has a higher number of senior citizen, while Parrs Park has a considerably higher school population and young adult group. Both areas consist of households that earn less than $20,000. The Deprivation Index also shows that these areas have a higher rating of social deprivation out of the five in Glen Eden (figure 44).

Kelston Boys High School and Kelston Girls Grammar are located next to Glen Eden East. It is fair to assume that a majority of local adolescents from all areas of Glen Eden will attend the Kelston High Schools. By locating the Village in Glen Eden East this will provide a place for the youth to go to that is a safe walking distance from school.

TIn Glen Eden East - Claywest Place, there is a large green space surrounded by houses and apartments. It is large enough for an institute to be developed. The site is close to offices, industrial repair companies, a supermarket, Kelston primary school, a deaf educational centre and both Kelston high schools (figure 51). Locating the village in Claywest Place may also be beneficial to the schools, the deaf education centre, and senior residents in the area who can at often times be lacking in assistance. The village will therefore have the opportunity to provide voluntary work for the youth, this may help

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95 Ibid
decrease current juvenile criminal activities in the area and in turn an increase in voluntary work.

The site is relatively flat (figure 54-56), the design may need some elevating methods in order to create an attractive looking village. There is also an existing pond, which can be made into a communal outdoor swimming pool for adolescents in the village.

A pocket park refers to a small park accessible to the general public. They are often developed on small, irregular pieces of land. There are a multiple of empty green pocket spaces in Glen Eden similar to Claywest. Due to the pocket like function of the site, the proposed youth village will be called The Pocket Village.
Figure 49: Glen Eden location map
Figure 50: Glen Eden’s 5 CAU areas and Claywest Place location map
Figure 51: Mapping of relations to site
Site Selection Process

Figure 52: Entrance points to site and road boundaries
Figure 53: Sun path diagram in relation to site
Site Selection Process

Figure 54: Site section A
Figure 55: Site section B
Site Selection Process

Figure 56: Site section C
Figure 57: Southeast entrance

Figure 58: View looking towards northwest of the site

Figure 59: Northwest entrance
7. The Programme

Male and female adolescents between lower and middle socioeconomic backgrounds between the ages of 14-21 will be the key residents with whom the Pocket Village will most want to engage. Parents and senior citizens of the Glen Eden community will also have an important role to play in terms of the function of the Village as an aid through the maturation process. They will provide opportunities for voluntary and paid work for the benefit of the wider Glen Eden community.

Social analysis of the Glen Eden area (site selection process) supports the need for a new architectural social environment for the maturation of Kiwi adolescents. The proposed Pocket Village is the outcome of an investigation through architectural design to introduce a new social context. This programme will discuss the purpose and function of the Village for adolescents in relation to the social issues of the Glen Eden community.

7.1 What are the issues?

The Glen Eden Research Report[^96] (2010) highlights the main issues affecting residents of the Glen Eden community. Specifically mentioned in the report was the effects of particular social issues on the lives of young people due to poverty of low income families[^97]. These include:

- Substance abuse (alcohol and drugs) and domestic violence.
- Marriage/relationship breakdowns/separations
- A growing gang like mentality in young people
- A lack of good male role models
- A lack of Early Childhood Education and afterschool care – that is culturally appropriate
- A lack of healthy and affordable homes for rent in the area.

[^97]: Ibid, 36
What is needed?

Facilities that engage young people is a high priority area for development to aid the maturation process. The demographic analysis of Glen Eden supports this need (refer to site selection process). With rising rates in unemployment there is concern for meeting the needs of youth. Statistics show that New Zealand’s overall school dropout rate remains among the highest in the developed world.\(^98\) The noted flow on effects for these young people can include an increasing lack of motivation, possible welfare dependency, substance abuse and suicide.\(^99\) Local job creation schemes and training is therefore essential.

Currently VisionWest\(^100\) provides opportunities in the area with the Genesis Training Centre\(^101\) offering the youth intensive Literacy and Numeracy courses so that they can gain unit standards on the New Zealand Qualifications Framework. The Pocket Village could potentially work in conjunction with VisionWest for those who seek further education or want to specialise in a trade.

The Glen Eden Report emphasises the need for more low cost after school and holiday programmes in the area. These programmes are invaluable for low income families that typically tend to work long hours which can have detrimental flow on effects for their young. In the Glen Eden area these include anti-social behaviour, gang-like mentality, loitering around town and intimidating residents etc. Therefore the Pocket Village will also act as an afterschool and holiday programme facility for the youth, teaching them the value of tradesman skills and community service.

Clearly a needs/gaps list could be endless. In summary there were three key areas discussed in Glen Eden:

- Meeting the needs of children and youth (and their families)
- Creatively engaging with community at a street and neighbourhood level
- Creating networks or links that are about open dialogue and...
relationship building across services/organisations.

7.2 The Adult Work Effect

The Teen Outreach programme as outlined by Joseph Allen and Claudia W. Allen highlights important issues for helping adolescents to mature. The program allowed adolescent students to volunteer a few hours each week in community service alongside experienced adults. This ultimately helped adolescents discover their potential within the workforce. Positive effects of this programme also included a 50% reduction in school dropout rates and a 50% reduction in teen pregnancies even though teen sexuality was not even its focus. The programme expresses what Allen has come to call the Adult Work Effect which he describes as “something far more powerful and effective than simply telling teens to get a job!”[102]

Therefore the Pocket Village will attempt to follow a similar program to what was offered by Teen Outreach, where adolescents and trained professionals can provide community work.

Opportunities for voluntary work are constantly needed in suburban areas e.g. building a deck, repairing roofs, repairing cars, tutoring children, reading to the elderly etc. Volunteer organizations in the Glen Eden area offer services to make a difference in the community but also seek to constantly inspire others to volunteer. The Pocket Village will provide workshop spaces that will be able to cater for these needs.

Socialist William G'[103]. Spady and Allen both found that by far the greatest facilitator of college success is the extracurricular involvement of the student during high school. Such students have a 37 percent greater chance of fulfilling their college goals than do non-participants.[104] This is an opportunity for the Pocket Village to provide extracurricular activities as one of the social facilitators, and a method to promote volunteer community work. The chosen activities taught by trained professionals must be appropriate and beneficial for the

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[104] Ibid
development of adolescents and for the community. Variation in the types of experience enables adolescents to choose, instead of having tasks assigned to them. Allen suggest that this has a stronger affect on adolescents for positive outcomes.

7.3 The Programmes

The Village will house a hub of services, a drop in centre and the development of an adolescent led space with the guidance of adult professionals. The village may include:

7.3.1 Trades Workshops

Onsite life workshop and social work facilities, having trained professionals in teaching ‘fix it’ skills to adolescents through the work of a tradesman at a non inflated service cost. VisionWest currently holds multiple portfolios in the provision of community outreach projects in the Glen Eden East area. This can be an opportunity for the Village to act as an extension to the existing VisionWest training centre. The Village can mentor young people in trades skills including automotive repair, construction and horticulture nurseries.

New Zealand suffers from a shortage of skilled trades people[105]. The Pocket Village will be a local training initiative in helping to address this shortfall. Nelson MP Nick Smith says:

“...New Zealand have underestimated the importance of trade skills for a generation...there is a shortage of skills...and that is compounded by the $30 billion rebuild in Christchurch.” [106]

The Pocket Village can therefore provide the training of future trade workers for the rebuild of Christchurch.[107]

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[106] Ibid
7.3.2 Transition/emergency housing

LIFEWISE foster care support services have identified the need for a space for young people to transition between placement through CYFS\(^{108}\) care and protection and independence as a young adult. This facility could also provide a transition and emergency housing for adolescents. These homes can act as a transition opportunity for learning life skills for independent living. Therefore the Village can act as an extension for LIFEWISE.

7.3.3 Sustainable Living

Sustainability is an important way of thinking in our modern society. The exploitation of natural resources is growing more apparent each day and it can have a profound effect on people’s lives.\(^{109}\) It is important to apply this mentality on our youth’s attitude in order to preserve the environment for the future generation. The idea of recycling has been introduced earlier (refer to The Importance of Recycling for your Youth) by reusing cargo containers as the structure for the buildings in the Village. This can be further developed by applying sustainable architectural strategies, in creating sustainable habitable cargo containers. This is not a new method as there are copious amounts of sustainable strategies that involve cargo containers. The design process will explore through these strategies.


7.4 Buildings for the Pocket Village

Important buildings that should be considered to cater for the proposed programmes in such an environment include:

1. A main building; for office and reception area
2. Training workshops; for the proposed trades programmes
3. Transitional housing for young people; a transition opportunity for learning life skills for independent living
4. Adult living quarters; living for adult professionals who will be guiding the adolescents in the Village

*Figure 62: A master discusses a vacuum compressor with his apprentice (front left) and several other craftsmen.*
8. Master Planning Process

The Pocket Village will consist of cargo containers in its design and construction. Therefore a fundamental insight into the scale of mass of the containers is essential. Through conceptual drawings, the Master Planning Process will explore the geometric alternatives of the Village structure on the chosen site.

“a building complex may take the form of a collection of small buildings connected by arcades, paths, bridges, shared gardens, and walls.”[110]

The structural characteristics of the Village is similar to a building complex formed by a collection of integrated small buildings. The overall effect will foster a healthier social environment opposed to the depersonalised environment created by monolithic buildings.[111] Studies show that the degree to which a building is broken into visible parts affects the social contact amongst people in a building. For the psychological health of its residents it is vital that the design process of the Pocket Village takes this into account.[112] A group of huts in an African village is a good example of this because it too is comprised of a multitude of buildings; not one huge building by itself.[113]

The Village will require four distinctive areas in order to cater to the programme aforementioned. This includes transitional housing for young people; living area for staff; trades workshop; and a main building. These will be connected by social squares, paths, bridges, shared gardens and walls.

8.1 Conceptual master plan

The conceptual phase will take into account the surrounding landscape in generating spaces within the site. At this stage of the design process, weaknesses and arising issues will be identified for further development into the preliminary phase.

Some considerations for initial master plan:

Buildings

- Buildings do not need to be designed in detail for a spatial

11 Ibid
12 Ibid, 471
13 Ibid
master plan. Simple outline forms will suffice along with an indication of entry points.

**Blocks and areas**

- Identify the different areas in the Village; defining the four distinctive building areas. Pathways usually define the edges of these.

- Indentify all possible entrance ways into the Village from roads and pathways.

**Exterior spaces**

- Hard and soft types will most likely feature and they may be located as activity nodes.

- Distinguish different outside spaces in the Village.

**Landscape**

- Consider valuable landscape features, local connections with open space and important views. Orientating buildings to compose views, and to enclose squares, will set up situation for landscape to play its part in the structure of the Village.

- Often sites or their surroundings hold evidence of native landscape character that is particular to the locality, e.g. tree groupings, hedgerows, walls construction, etc. Consider ways of introducing these features into the proposed landscape strategy of the site. Native plant species thrive in their home surround and using local crafts also assists with sustainable objectives.

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115 Ibid

116 Ibid

117 Ibid

118 Ibid
8.1.1 Locating entry points and identifying zones

Figure 63 and 64 identifies the existing entry points into the site. The connection between these two points generate a spine like correlation for the whole body of the Village. This connection serves as the main street for the Village with connected paths to activity nodes. A solid connection between these two points will be evident throughout the Village. The main entrance will be from the southeast due to its openness to the site. The secondary entrance will be from the northwest as it is more private due to its narrow geometry. Currently it is a narrow driveway for existing houses in the area.

The red patches on figure 63 are the potential area groupings that will cater for the smaller buildings within the Village. These areas are likely to be connected by paths, bridges and shared gardens.

Figure 63: Identifying zones on the site
Figure 64: Identifying building zones and existing entry points
8.1.2 Playing with building blocks

This process is the exploration of the alternative orientation of the building blocks in creating a village structure (figure 65 and 66). The initial orientation process attempts to follow the contour lines; acknowledging the valuable landscape features of the site, connections with open space and important views. Smaller buildings will enclose squares for larger social activities. This space becomes a communal area where adolescents can partake in recreational activities comfortably. Quiet backs will be useful as adolescents can choose to withdraw themselves from larger spaces and refresh themselves with quiet areas amongst natural environments. These spaces can be gardens or courtyards.

Figure 65: Conceptual sketches of creating a village structure

120 Ibid, 350.
121 Ibid, 302.
Master Planning Process

Figure 66: Conceptual master plan

POCKET VILLAGE CONCEPTUAL MASTER PLAN
8.1.3 Overview

Achieved:

- The first scheme has attempted to locate different areas in the village, identifying different buildings for the programme.

- The composition of the buildings attempts to follow the landscape, integrating with the natural geometry of the site.

- The orientation of buildings for the transitional housing area attempts to frame larger social activity space. The smaller exterior space between each building groups act as quiet spaces from the larger square. This exterior space becomes a quiet back, providing adolescents time to refresh themselves in solitude if they should prefer it. This area is closer to the northwest entrance since living is a private subject.

- The workshops are connected together and are closer to the main southeast entrance. This is because the building will need better access to the public.

- The thought of a car park has been put in consideration.

- The adult living area is situated in the east which enables important views to the site.

- The conceptual scheme proposes the existing pond area to act as a recreational ground. Providing a playground (in this scheme a tennis court) for adolescents.

- The connection between the main entrance and the secondary entrance is evident.

Weaknesses:

- Arrival space on both entrances are missing, there is no reception building - no recognisable entry.

- The adult quarters are too far away from the youth. Easy access to the transitional living area for the adults is essential; in case of misconduct caused by adolescents.

- The buildings are not generating efficient outside spaces
- They are currently creating strange shapes and wasting valuable space.

- The buildings are not generating warm, wind-free, sunny outside spaces adjacent to the inside spaces.

- The living spaces for the youth are not connected to the workshops.

- The workshops have no truck access for delivery of materials and removal of finished projects and rubbish.

- Roads (odd shaping) and parking dominate the entry in a sort of waste land.

- There seems to be no larger communal building to allow people to gather together, they seem to be confined to their own rooms.

- There is a lot of leftover space without any contribution to the village structure.

Figure 67: Conceptual models of the conceptual master plan
8.2 Preliminary master plan

The preliminary phase will respond to the weaknesses of the conceptual master plan. Further exploration in terms of planning will be generated in this phase.

Considerations for preliminary master plan:

- Approximate size for each building type
- Sustainable planning techniques e.g. proposals for north-south building facades
- Adult living quarters will need to be located closer to the transitional housing area
- Arrival spaces will need to be clearly defined
- Improved path connections
- Sensible road sizing for larger vehicles
- A larger communal building or some sort of covered space
- Activity nodes\textsuperscript{122} or outside communal spaces will need to be identified clearer in the plan
- Healthy exterior spaces such as gardens will be needed.

8.2.1 Grid Orientation

Sustainable building techniques will be employed by rotating the buildings at a 90 or 45 degree angle allowing north-south facing facades.\textsuperscript{123} Figure 68 is the new configuration of the Pocket Village. This technique allows warm, sunny outside and adjacent inside spaces.\textsuperscript{124}

Sun shading devices will therefore be considered later on in the design process. This orientation also allows buildings to generate efficient outside spaces, allowing more buildings to fit on the site. This will define the outside spaces more than the previous master plan. The adult living quarters will then be situated in the south, looking towards the north where the transitional housing is now located. This allows adults to have better access and oversee the adolescent living area.

\textsuperscript{122} Ibid, 167
\textsuperscript{123} Foley, 6-11.
Figure 68: Grid orientation method
8.2.2 Circulation Realms

The Pocket Village must produce clear circulation realms, people may have no idea where they are due to disorientation. As a result they will experience considerable mental stress.\(^{125}\) Figure 70 shows the improved circulation in the Village, by transitioning into a sequence of realms, each marked by a gateway and becoming smaller and smaller, as one passes from each one, through a gateway, to the next.

8.2.3 Network of Learning and Vehicle access

There is now a connection between the transitional housing area and trades workshop area. The paths create a physical network system, allowing access for adolescents into different activity nodes.\(^ {126}\) However the connection path is still weak as there is poor access between living and working areas. The arrival spaces on both entrances are more defined and appealing.

The dimension for vehicle access located in the main entrance is approximately 10 meters, which is ample sizing for larger vehicle access into the trades workshop e.g. pickup trucks, flatbed trucks, dump trucks, and tow trucks. Minimum access for industrial vehicles is 5.5 meters.\(^ {127}\) Vehicle access in the secondary entrance will remain the same, because this area does not require larger vehicle access.

8.2.4 Activity nodes and connected car parks

Figure 71 highlights the outside spaces which are the activity nodes for communal use. The outside spaces are more defined by the new orientation of the buildings. Car parking areas are more developed with two proposed sites on both entry points. Car parks will need to be further developed in the developmental master planning stage.

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125 Alexander, 481.
126 Ibid, 164.
Overview

Majority of the proposed issues from the conceptual stage are met. The preliminary master plan consists of plausible outcomes for a healthy social environment for adolescents. However further development is needed. The next phase of design is the developmental stage, which will further augment the details in design for each area in the Pocket Village.

Listed below are the areas that need further development:

- Path connection between the living and the working areas
- Building arrangements
- Outside spaces for outlining their use e.g. production space, communal space, recreational space and garden space
- Car parking
- Arrival space
- Detail of buildings
- The existing pond
Figure 70: Improved circulation throughout the Village (red)
Figure 71: More defined activity nodes (red)
9. Development Stage

The development stage will focus in detail on each area of the Pocket Village to further develop the primary areas that were listed in the preliminary master plan. This section will include design and construction specifications for each proposed building types including:

1. A main building / reception
2. Trades workshops
3. Transitional housing for young people
4. Adult living quarters

From the preliminary overview an initial master plan will be produced. This will act as a foundation for the design and construction of each building.

Each building will include design and construction features associated with the form of a cargo container. The chosen form for each building will affect the final outcome of the master plan for the Pocket Village.

Developed master plan in response to the issues presented in the preliminary overview

Listed alterations:

- Easier transitions between the living and working areas
- Several building forms have been altered in this master plan, producing a hierarchy of different building forms.
- The outside spaces are more defined with their dimensions more apparent according to function. The larger areas are production spaces, communal spaces, and recreational spaces. The smaller areas are either for garden spaces or courtyard spaces.
- The arrival spaces are clear and sufficient car parking have been developed at both entrances.
- The dimensions of the pathways to each trades workshop areas are adequate for larger vehicles.
- A bridge across the existing pond is leading to the neighbouring apartment block has been proposed.

Figure 72: Developed master plan in response to the issues presented in the preliminary overview.
9.1 The Main Building

“A complex of buildings with no centre is like a man without a head”[128]

The function of the main building will be to help people understand their surroundings and orientate themselves by forming a mental map.[129] In traditional 18th century English villages, a church is the main building in the community.[130] These buildings are taller and more prominent than all the other buildings in the village, enabling people to naturally reference themselves in the community. A church acting as the main building is the functional soul of the village.

Therefore the main building in the Pocket Village must be higher and more prominent than any other building in the complex, so that the eye goes immediately to the part which is the most important.[131] The main building must also provide a sole purpose for the whole Pocket Village. In this case it will be an administration/reception office building.

The main building will need to include:
- reception area
- principal’s office
- managers office
- meeting room
- administration office
- communal kitchen
- communal toilets

9.1.1 Site planning

The location of the building (figure 73) will oversee important views of the Pocket Village. This will add to the feeling of security and clarity to the Villages’ inhabitants. The position of the building also serves as a
landmark which is connected to the main circulation on the west which leads to each workshop area. The building is close to the main entrance, people will immediately identify this as the main reception building. The building will have easy access to the main car park on the south and also have its own car port for important visitors.

The main building will sit on a platform-like base as a boundary, emphasizing the importance of the building. The building will be constructed by 40 foot cargo containers. Figure 74 shows the building area highlighted in red. The area only allows three containers in width. The remaining highlighted building area on the north allows a porch space which leads to a sunny outside area. There is also an outside space within the boundary on the west which will act as an entrance transition area by using steps on the south.

Figure 74: Developed site plan of the main building
9.1.2 Four-story Limit

High buildings can have adverse effects on mental and social health. The strongest evidence comes from D. M. Fanning,\textsuperscript{[132]} showing a direct correlation between occurrence of mental disorder and the height of people’s apartments. Fanning suggests that the higher people live off the ground, the more likely they are to suffer from a mental illness.\textsuperscript{[133]} This may also affect people working in monolithic buildings which can create the sensation of taking people away from everyday society. It leaves them feeling segregated and alone in their work space. Fanning’s findings are reinforced by Dr. D. Cappon’s clinical experiences reported in \textit{Mental Health and the High Rise}.

\textsuperscript{[134]} The four-story limit will apply to all building designs in the Pocket Village.

The main building will be within the four-story limit and will require only three shipping containers in height. An extension on the ground level containers will be needed to create a double height space of 4 meters in the entrance/reception area. The extension will allow more light into the space and create a larger ambience. Figure 75 shows the basic structural configuration of the main building in section.

\textsuperscript{133} Ibid
\textsuperscript{134} Dr. Daniel Cappon, \textit{Mental Health and the High Rise} (Canadian Public Health Association, 1971)
9.1.3 Plans

Ground level

The main entrance is from the west which will provide a slight level change within a few steps (figure 76). This creates a sense of transition while entering the building. The entrance leads into a lobby space with the reception area on the right and waiting area on the left. The elevator is at the west end of the building, directly opposite to the main entrance. The ground plan also consists of a separate office space for higher ranking personnel, a space for private conversions with clients. There is also communal toilets, an exterior porch on the north and a double height staircase for emergency purposes.
First Floor

The first floor consists of a help support/administration area (figure 77). A group of staff will be answering calls from people who are interested in joining the Pocket Village or who are in need of adolescent support. This level also consists of a double height meeting room which will be a brighter and larger space. This space is for group discussions or family counselling. There is also a communal kitchen with an adjacent balcony on the north where staff can congregate and share their meals together.

Second floor

The second floor (figure 78) will house a small reception area, waiting space, small storage room, small kitchen and the principal’s office. Troubled adolescents will be transferred to the waiting area on this level for further counselling with the principal of the Pocket Village. The location of the principal’s office on this level allows him/her to observe the whole village on the adjacent balcony. These balconies will need some sun shading devices.
9.1.4 Additional design solutions

Structural solutions

The main structure of the building is the combination of nine cargo containers (figure 75). However due to its triple stacking and extension, weight could be an issue. Therefore a structural method is required. Sugoroku Office\textsuperscript{[135]} by Daiken-men Architects in Gifu, provides a useful structural method for stacking containers by using a steel mobile frame (figure 38). The steel frame acts like a ‘racking’ system by holding the weight and keeping the containers together. This method suggests that a similar structural system will be needed for the main building. The structure may allow additional components to be applied on to the frame such as the roof, an adjustable second skin to reduce solar gain and steel pilotis.

Roof

The butterfly roof is a good method of sustainability due to its shape. The roof has two tandem pieces, which are angled up on the outside. The mid section where the two pieces meet are angled downward (figure 79). It can be imagined as an inverted gable roof. The design of the butterfly roof allows for rainwater to be harvested and stored in a water storage tank. The material of the roofing should keep the shed like character of the cargo container by using corrugated steel.

The roof will require structural support in order for it to be on an angle. Cinco Camp by Wellen Rohtenberry provides a structural system, (figure 36) by using carry beams in order to hold the roof on an angle. The main building will require a similar method, by using the carry beam system to hold the butterfly roof in place. The method also allows the roof to hover above the building absorbing most of the heat. The remained of the heat is dissipated by the wind currents that pass between the canopy and the container below.\textsuperscript{[136]}


Development Stage

Sun shading devices will be needed for the northern facade. This will reduce solar heat gain during warmer months and prevent glare from disrupting the occupants. The chosen sun shading device is a foldable horizontal shutter filter which can act as a second skin when closed (Figure 80). The foldable shutter device can also become eaves when fully opened. Filter materials such as opaque base material (woven or perforated, metal screens or fabric) or transparent base material (etched, translucent, or fritted glass or plastic) can be applied.


Figure 79: Basic shape of butterfly roofs

Figure 80: Foldable shutter device
Colour

Similar to the Fai Fah by Sparch and Sjakket Youth Club, the use of colour and visual art strategies have been used to highlight the facility within the community. The cargo containers provide a canvas for graffiti enthusiasts to display their 'street art'.[139] Abandoned cargo containers are a popular choice for street artists to apply their artwork and it is a common visual artistic expression for young people.[140] Therefore, the buildings throughout the Village can use graffiti artwork on their facades as the colour strategy.

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9.1.5 Overview

This section provides an architectural design proposition for an office building type, through the novelty of using cargo containers. The design alternatives presented are all existing design methods. Due to its simplicity, there are countless methods of design alternatives that can be applied. Figure 82 is the chosen outcome for the main building and figure 83 shows the additional design components proposed earlier.

For the remaining building sections, similar design solutions will be applied. It is important to keep the whole design consistent; too much variation in design can create a disorganized outcome.[141]

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Figure 83: Exploded diagram of the main building, showing the additional design components

- Foldable second skin device
- Butterfly corrugated roofing on carry beams
- Mobile steel frame
- Steel staircase
- Steel pilotis
Figure 84: Cross sectional perspective of main building
9.2 The Workshop

“This fundamental learning situation is one in which a person learns by helping someone who really knows what he is doing.”[^142]

The workshops in the Pocket Village will provide the mentoring of young people in ‘fix it’ skills including construction, automotive repair and horticulture with the guidance of adult professionals. Each working area in the Pocket Village can cater for approximately 12-16 people (including at least one adult professional).

An experiment by Alexander and Goldberg suggested that a class in which one person teaches a small group of students is most likely to be successful in those cases where the “students” are assisting the “teacher” on the work he is doing.[^143] This suggests that smaller working groups have better learning and productive affects on individuals. Japanese architect T. Takano, in his study of work groups in Japan found that five persons formed the most useful functional group.[^144]

[^142]: Alexander, 412.
[^143]: Alexander and Goldberg, Report to the Muscatine Committee, on experimental course ED. ioX, Department of Architecture (University of California, 1966)
[^144]: T. Takano, Building Section, Building and Repairs Bureau Ministry of Construction: The Design of Akita prefectural government office (Public Buildings, 1961)
Site planning

Each working area must be identifiable which can be done through the orientation of the buildings. It is important that each entrance on each working area allows sufficient spacing for large vehicle access. Figure 89 shows the developed site plan of the working areas.

The outside space in each area will be different in size and shape due to the function of each programme:

- The construction area will need sufficient space for projects such as 50m² one-storey buildings. The area will require a loading bay for pickup and delivery. This area will need to be closest to the main entrance, enabling easy and safe access for large vehicles.

- The automotive repair areas will need a small car parking area. Production areas will be indoors or in a covered space. An outdoor basketball court will be located on the northwest of this vicinity. The location of this space will encourage adolescents from each working area to congregate and engage in recreation during intermissions. This space will also lead to a green area which is next to the existing pond;

- The horticultural nursery will need a greenhouse and a vegetable garden which will require at least 400m².\[147\]

The working areas are on shifting levels due to the landscape. Therefore ramps are essential for vehicle access into each area. Three major ramps will be needed - figure 87, marked A, B, and C. Figure 86 shows the required dimensions for each ramp.

![Figure 86: Ramp dimensions located on figure 89]
9.2.1 Workshop design

The building plan and construction for the workshops in each area will be similar, providing a versatile design catering for all programmes. Each area will consist of two workshops, where each workshop caters for one small group (5-6 people).

Similar to the main building, the workshops will be constructed by 40 foot cargo containers. At least two adjacent connected containers in width is sufficient for such a workspace. The height of the workshops will be restricted to two cargo containers, allowing double height. An additional cargo container may be included for a small communal kitchen and bathroom. Figure 88 shows a conceptual plan and elevated section of the proposed workshop design.
9.2.2 Plans

Ground floor

The main working area is designed for versatile use for all programmes in the Pocket Village. The area allows a maximum of four people working together. This space may include:

- cutting tables and similar machinery for the construction workshops
- one small vehicle and levelling platforms for the automotive repair workshops
- tables and cabinets for the horticulture nursery workshops

A large double height opening is provided adjacent to the main working area for easy and safe transitioning with heavy objects. There is a small level change (0.5m) between outside and inside space with steps. However, the automotive workshop will require a ramp for vehicle access.

Figure 88: Conceptual sketch of workshop plan and section
The staircase leads to the upper level for smaller working space and the communal kitchen area. Storage space is essential for all programmes as it is best practice for tools to be stored safely. The communal bathroom is located on the ground floor, with two toilets and two shower units. There is also a covered outdoor working area.

**Top floor**

The top floor includes an upper working area. This can be the working space for the teacher/adult professional. He/she can observe all working areas at this level. The hallway leading to the small communal kitchen can be used for shelving. The communal kitchen is accessible to the adjacent balcony space.

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Figure 89: Typical workshop, ground floor plan

Figure 90: Typical workshop, top floor plan
9.2.3 Additional design solutions

Structure

The main structure of the building is the combination of five cargo containers and an additional unit for the bathroom area. A structural steel frame is needed to hold the main body of the building together. Similar to the mobile steel frame proposed for the main building, a smaller steel frame can be applied. However, the design of this frame will be similar to a square steel portal frame, by spacing it evenly across the main part of the building. The structure will allow additional components to be applied on to the frame such as the roof, large shutter doors (for the double height opening), steel pilotis, and heat dissipating panels (if needed).

The overhanging building on the top floor will require supporting steel posts and beams. Simple construction methods for any double height building for this part is sufficient. The covered workspace is located underneath this area.

Storage solutions

The proposed programmes will require proper safe stacking and storage system. Accidents often occur while goods are being stacked or de-stacked or taken in and out of storage.[148] Therefore a storage design for the workshop is essential; a place for storing materials and tools for easy access and reducing hindrance to production.

Proposed safe stacking and storage systems for each programme in the Pocket Village:

- Construction; a simple steel racking system can be assembled in the storage area, allowing timber goods to be stacked on The existing container doors may allow an opening for forklift trucks to access for stacking and de-stacking (figure 93)
- Automotive repairs; an electronic four post lifting system can be applied.

- Horticulture nursery; a simple stacking storage system for harvested goods is sufficient. However, different vegetables need different storage conditions. Temperature and humidity are the main storage factors to consider\textsuperscript{149}

9.2.4 Other components
A simple mono pitch roof with similar angle and materiality to the main building is sufficient. The structure of the roof can either use similar method in the main building or industrial roofing methods such as suspended steel truss on beam.

A closing and opening facade for the double height entry adjacent to the main working area is required. This will be similar in function to a garage door. A civil engineering building designed by James Swenson and Ross Barney Architects\textsuperscript{150} provides an interesting design solution for such an opening. The building provides a large corten steel clad folding door. This provides a design alternative for the large opening of the workshops (figure 92).

9.2.5 Overview
This section provides an architectural design proposition for a small versatile industrial type building through the use of cargo containers. There are countless methods of design alternatives that can be applied. The following images shows the proposed outcome of the workshop


Development Stage

Figure 92: Section perspective of the workshop

corten steel clad folding door.

mono-pitched roof on suspended steel truss beams
Figure 93: Perspective image of the construction training workshop
Figure 94: Perspective image of the automotive training workshop
Figure 95: Perspective image of the Horticulture nursery training workshop
9.3 Housing for young people and the adult quarters

“If a teenager’s place in the home does not reflect his need for a measure of independence, he will be locked in conflict with his family.”[151]

This part deals with the design of accommodation in the Pocket Village for adolescents. Those living in this space will be around the age of 18, allowing at least two years of transitioning time into adulthood. These adolescents will either be working in the main building or aiding adult professionals in their workshops.

The design will also involve short term living for a group of volunteer adult professionals. They will stay in similar designed spaces for a short period of time before another cycle of adult group takes over. The Village will model an institution which is actually a model of adult society, in which the adolescents will take on most of the responsibilities for learning and social life. In this environment, the adults will keep a feasible distance while at the same time providing the adolescents with guidance through clearly defined roles and forms of discipline.[152]

Young people who are transitioning into adulthood are older and require a quieter and more ‘adult’ living environment. Architect David Morley and MacCormac J. Prichard provide plans for an ideal and fundamental flating space for young people (Appendix A fig2 and fig3). Their plans illustrate the primary components that are essential for young people. Therefore the planning of the living space in the Pocket Village will be similar to Morley and Prichard’s design.

The primary living components are:

- room with en-suite
- study space
- communal kitchen area or kitchenette
- communal studio space

151 Alexander, 724.
152 Ibid, 418.
9.3.1 Site planning and the living containers

Figure 100 is the developed site plan of the orientation and layout of the living containers. The site holds two types of living containers. The first type is constructed by 20 foot cargo containers - first design, and the second type is constructed by 40 foot containers - second design.

The first design is near the north of the site and consists of two groups of five liveable containers. Each group is orientated to form a courtyard space, for social group gatherings. Each of these containers only allows for one occupant. These spaces are for adolescents who are more experienced with independent living and require proper individual spaces. The first design will require a kitchenette inside each module (figure 99).
Development Stage

Figure 98: Developed site plan of living area
The second design is constructed by two connected 40 foot cargo containers, creating one liveable module. Each module can provide three flatting units (figure100). Therefore, a ‘second module’ is needed to form a group of six occupants. This is located behind the first module with a courtyard space in the middle. Similar to the workshop, groups of five or six proves to create an efficient working group.
The second module will need an extension for a communal living and kitchen area (figure 102). There are three groups of these modules on the site, catering for a total of 18 adolescents. Adolescents living in these modules are new to the living programme of the Pocket Village and may require closer connection to adult guidance. One of the second modules on the southwest is a two-storey building (due to the landscape), the ground building of this will be a Laundromat constructed by three 20 foot containers (Appendix B figure 1).

The adult quarters are located on the south of the site and are similar to the second design. Due to the landscape these will need to be two-storey buildings in order to maintain the view from the south; allowing them to observe the adolescent living areas. The living modules will be on the top floor and the ground modules can provide a communal gym (figure 103). Similar to the second design, the adult quarters also contain a courtyard space in the middle.

The living containers are on shifting levels due to the natural landscape, with the north part of the site being the lowest and the south being the highest. This creates a ‘cascading’ effect of buildings when viewed from the secondary entrance. (Appendix B figure 2)

The secondary entrance leads to a car parking area, which then connects to the arrival space. The arrival space dissipates into smaller paths, stairs and bridges; leading to other areas of the Village. The larger central area formed by the living groups can be a space for large communal activities. This space can be covered. The highlighted space in figure 100 (in green) is a path that leads to a garden space on a lower level - approx. 3 metres. The path leads to the south, ending on the

Figure 102: Conceptual sketch of one whole grouping of the Second design, red indicates the extension needed for the communal living and kitchen area
ground level of the Laundromat and the communal gym.
Development Stage

Garden/Courtyards

“Form some kind of enclosure to protect the interior of a quiet garden from the sights and sounds of passing traffic[...]. The smaller garden, however, the harder and more definite the enclosure must become. In a very small garden, form the enclosure with the buildings or walls[...].”[153]

Courtyard and garden space is important. The benefits to having a courtyard not only enhances social interactions but also offers healthy living with tangible benefits—not to mention potential savings. These include:

- Better ventilation: natural ventilation is an important issue. Windows in rooms around the courtyard can add a lot of air movement within a home as well as provide natural heating and cooling.[154]

- Properly located, courtyards can extend sight lines and allow small spaces to feel and live larger.[155] These spaces could also be private and protected exterior space. They can be dressed up with fireplaces, trellises, outside heaters and built-in barbecues.

The presence of nature will be fostered through the garden and courtyard spaces. They will offer the adolescents a calm and tranquil retreat from the work areas. In a city, gardens and small parks try to solve this problem. Executive Director of Denver Urban Gardens, Michael Buchenau suggests that gardens serve an important social element to any group of people; by modelling healthier lifestyles through activities and connecting with each other.[156]

The garden/courtyard can be partitioned by half open walls (figure 104), creating an enclosure to protect the interior of the garden from the sights and sounds of the work spaces. The courtyard becomes a garden for adolescents to withdraw from the larger communal areas in the Village. The use of a trellis (figure 105) could also be added to the courtyard to help shape the outdoor spaces on either side of it.

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153 Ibid, 807
155 Ibid
156 Ibid
Figure 104: Typical courtyard space for the Second design group, red indicates the proposed halfwalls

Figure 105: Typical courtyard for the Second design group, red indicates the possible trellis
Figure 106: Section cut of the Second design group, showing the living space, and courtyard space
9.3.2 Additional design solutions

Sun shading elements

Carabanchel 16 housing project designed by Foreign Office Architects\[157\] offers a solution to help alleviate heat gain from the sun. The units are surrounded with a 1.5 metre terrace enclosed with bamboo louvers mounted on folding frames which can be opened. Screens also help diminish solar gains in the units while turning the facades into a kaleidoscope shape. This device could be an alternative solution for the modules by inserting a small terrace on the northern side enclosed with foldable timber louvers. This can only be applied onto the second design.

The 20 foot living containers will need heat dissipating panels on the north or northwest facade, similar to Camp Cinco (figure 36). These panels prevent over heating during warmer months.

Solar energy

Team China’s Y Container\[158\] contains a flat roof lined with photovoltaic panels. It transfers the heat collected from the sun to heat the Y Container’s floor, as well as the hot water used within. The use of photovoltaic panels on the living containers is a sensible architectural solution for energy efficiency and sustainable purposes.

Roofs

The first design will use the mono pitched roof design (figure 107), similar to the workshops. The second design will use butterfly roofs which will consist of photovoltaic panels (figure 108). The structure on both roofs will use the same method applied to the main building.

Structural systems

Both living container designs will be encased by multiple steel portal frames similar to the workshops, which will support the roof structure on top and steel footing on the bottom (figure 107 and 108). The steel portal frame on the second design will allow the attachment
of foldable timber louvers.

**Pond**

The existing pond can be turned into a communal public swimming pool. This can be done by framing the pond with concrete and surround it with a walk able pavement. There are numerous ways of doing this, it is considered a landscape design process.

### 9.3.3 Overview

This section provides an architectural design proposition for flating solutions through the novelty of using cargo containers. The design alternatives presented are all existing design methods. Due to its simplicity, there are countless methods of design alternatives that can be applied. The following images show the proposed outcome of the proposed living container designs.

*Figure 107: exploded diagram of the First design module, 20 foot cargo container*
**Figure 108**: exploded diagram of the Second design module with extension, two 40 foot cargo container.
10. Design Outcome

Through the design process of the development stage, the chosen solution for each building has refined the final outcome of the master plan - figure 109.

The final outcome provides:

- A village structure through a collection of smaller building types
- A plausible set of building types for such an environment
- A healthy social environment for learning
- A liveable environment for young people and short term occupants
- Sustainable planning techniques
- Efficient indoor and outside spaces
- Clear and defined arrival spaces
- Clear circulation pathways

- Sensible road sizing for larger vehicle access to workshops
- A strong connection between the living and working
- Sufficient car parking
- Defined activity nodes
- Healthy outside spaces such as gardens and courtyards

The biggest influence on the final outcome of the design has been the exploration of using cargo containers as the basis of construction. The design alternatives presented in the design development section are all plausible design methods. Due to its simplicity, there are countless methods of design alternatives that can be applied. The chosen methods create a credible design for each programme in the Pocket Village, producing a realistic scheme.
Figure 109: Final outcome master plan
11. Conclusion

The aim of the Pocket Village is to produce a new social context in response to the issues of inadequate maturation in adolescence. The chosen solution has successfully provided a village structure with a sensible set of building types; ultimately creating a healthy social environment for learning and living for adolescents.

Due to the complexity of a growing child it is difficult to determine if the worldwide cultural milieu of a village structure will provide a suitable maturation environment for all; every youth possesses diverse situations. However, the design outcome has explored substantial architectural design alternatives that strongly engage with these social issues.

There are many areas in New Zealand similar to Glen Eden that require youth support facilities. The Pocket Village provides an alternative for such a need. There are also numerous small pockets of empty green spaces similar to Claywest Place. These can also be developed into Pocket Villages in order to cater to more adolescents who can congregate in a healthy, safe and influential environment.

The Pocket Village is not limited to using cargo containers as the only design and construction method. This was chosen for the opportunity in promoting the idea of recycling, which is an important concept for the future generation. There are many different architectural design methods yet to be explored.

The workshops in the Pocket Village are not restricted to the proposed programmes. There are many other alternatives e.g. sports, electronics, engineering, cookery. It is important to note that the programme is only an application to augment the social engagement and learning process between the adolescents and the teaching adult.

The chosen solution is only the first version of the Pocket Village; the project is open to new alternatives and ideas. Overall, the project has achieved the goals of a healthy functional social environment. Whether or not the concept of a Pocket Village can significantly improve the growth of youth in New Zealand is an opportunity for future development to determine.
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Figures

Figure 1: Painting of the main characters from the movie ‘The Goonies’ (1985) by Jim Hance, http://img401.imageshack.us/img401/7452/gooniespaintingtr2.jpg

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<table>
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<th>40’ container</th>
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<td>61,289 lb</td>
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*Figure 4: Container sizes, “Container sizes,” accessed August 21, 2013, http://intership.ca/?page_id=599*
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