A Transient life

Stripping life back to its basic daily rituals to focus on the art of socializing around a portable architecture.

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I would like to dedicate this project to Keith Morris.
I. Acknowledgments

This project would not have been possible without the help of some special people. Firstly I would like to say a huge thank you to my supervisors, Professor Mike Austin and Jeanette Budgett who have guided me through this journey. I have been so lucky to have had them on my team. I would also like to thank David Chaplin for his words of wisdom and encouragement. This undertaking was also made possible by the help of my peers who have been a constant supply of inspiration and laughs. Lastly and most importantly I would like to thank my mother, Dave, Nana and the rest of the family for their unconditional support through this long but very fulfilling experience.

I hope you enjoy it.
II. Abstract

Some proportion of the world’s population has always been committed to a life of nomadism. This transient way of life is, for some, a means of survival, a way to secure their next meal. For others, a nomadic lifestyle provides a chance to see the world on a small income. Today this lifestyle is intergenerational and world-wide. It is commonly referred to as a modern nomadic way of life.

‘A Transient Life’ analyses how traditional nomads reside and socialise in order to craft an architecture which emphasises social interaction and comfort as requirements for the modern nomad who travels and works throughout New Zealand.
III. Project Structure

‘A Transient Life’ is broken into two sections, one is a written thesis and the second is the design. The thesis is the foundation for the design and is the explanatory document for the design process. This document also explores the research which led to the final design conclusions.
1. Introduction

Many people today decide to sell their possessions and travel their country or the world spending a few months at each destination while working. This concept is also known as a working holiday. One in three short term jobs available in New Zealand over the last seven years involved seasonal work, predominantly in the horticulture industry. The vast majority of work in that industry (82.1%) was short term work lasting between one and nine months. New Zealand is known as a thriving export country and we rely on such revenue to sustain economic growth.

There is a need for more seasonal workers in the horticultural industry, therefore this project attempts to create an architecture that can alleviate their working conditions in order to attract others to follow this lifestyle. It has become increasingly difficult to recruit more seasonal workers both locally and from overseas. This concern has raised research questions which this paper will attempt to resolve: How can architecture help the horticultural industry attract seasonal workers? How can architecture influence the social lives of modern nomads for the better? If this architecture was made in repeating units, how could the layout enhance peoples social lives and improve their working experience?

While the project targets the horticultural industry, I will show how it can also be used as a form of sophisticated portable holiday architecture for the middle classes. The project will extend beyond the architectural constraints of a caravan and tent, allowing their shelter to become an alternative form of holiday accommodation.

4. Ibid.
1.0 The Brief

While 82.1 percent of work in the horticulture industry lasts between one and nine months, 64.8 percent of this work lasts only one to three months. A Transient Life looks at providing a suitable architecture for the short-term needs of seasonal workers and holiday makers. These groups range across all nationalities, ages and classes. The horticulture industry works in shifts depending on which produce is in season, (seasonal graph in appendix 1) therefore the architecture needs to be adaptable and able to be moved from property to property to meet the accommodation needs of the workers.

This project involves the design of a portable, folding architecture that can be transported by means of a non-commercial standard light weight vehicle. The shelter complies with the maximum 2.4m towing limitations as it is transported around the country from season to season. To ensure the project meets the minimum road user requirements the structure needs to be light weight and easily operated when at its short term destinations. The design of ‘A Transient Life’ revolves around three separate principles that unify the project:

- The technical user operation and structure
- A stripped back exploration of life’s daily rituals
- The social environment of seasonal workers, (including the relationship between the architecture and the physical environment).

1.1 A stripped back exploration of life’s daily rituals

This section of the project analyses how we live on any given day in New Zealand and what is considered compulsory. How can we live with less without becoming detached from society? Our developing environment tells us we must incorporate certain services and facilities into an everyday life, such as:

- Running water - hot and cold
- Toilet facilities
- Showering and washing facilities
- Power
- The internet
- Cooking facilities

One would struggle socially, physically and mentally to survive in a relatively developed culture like New Zealand for long periods of time without the essential services above. These services are included in the project, as it is intended for a lifestyle that simply ‘plugs’ into its next location.

The design of the structure will not rely on any separate service building to accommodate the facilities needed for daily duties. Cooking, cleaning, eating, sleeping, washing clothes are to be done within each individual structure/hut.

To understand the way we live productively in society we need to understand the influence of the computer and especially the internet. People of all ages and nationalities connect to and are in contact with anyone else on the internet wherever they go, hence the need for this service to be included in the project. According to the Internet World Statistics, as of June 2010 there were 3,600,000 internet users in New Zealand (population 4,290,000).

In order to operate basic devices such as cell phones, lap tops, computers, lights and ipods, we rely on electricity. Solar power, provided by ultra thin panels, either multicrystalline or monocrystalline, would allow the use of electrical devices and appliances.\textsuperscript{8}

1.2 The social environment of the seasonal workers

Proposed Site - CBD fringe of Auckland city

The project underwent a series of changes as the design process occurred. One of the immediate developments was a change of site. The original site was in the main street of the urban community of Ponsonby (Ponsonby Road). The initial site was bordered with all the necessities that a modern nomad would need including restaurants, supermarkets, shops, and provide some opportunities for short term employment. This site is also of interest to tourists and transient dwellers because of the community atmosphere.

This particular site contains many pre-existing social advantages for an international transient to access but it requires them to search for work in the surrounding businesses either before they arrive or shortly thereafter. There is no guaranty that work will be found, and because this lifestyle, like all life styles, relies on an income this site was found to be unsuitable. The proposed architecture becomes redundant if no one can afford to live there. Therefore the site or sites need to offer an income for people using it. The architecture is a modern step away from a caravan, tent or a standard hut. This project anticipates on a new era of this growing modern nomadic lifestyle and the need for prefabricated, collapsible, portable architecture which has been stripped back to provide life’s basic necessities. It is of just as much use to the modern camper and holiday maker.

The project attempts to create a sophisticated modern architectural caravan that can be towed, erected and enjoyed anywhere. The proposed prefabricated structures can be moved from orchard to orchard depending on the seasons. The project is able to be erected close to the work area thus avoiding travel expenses. Every site is different therefore the shelter needs to adapt to a sloping site as well as it does to a flat site.

There are over 50,000 positions available on orchards around the country for anyone holding a New Zealand working visa.9 This thesis looks at how the workers are currently accommodated, and looks at how to achieve a better solution.

Kiwi 360 Site Arrangement
Primarily used as accommodation for orchard employees, this process aims to attract people normally working in fruit growing places such as, Central Otago, the Hawkes Bay, Te Puke and Kerikeri. I have critiqued one of the accommodation and social layouts that already exist in the horticulture industry, Kiwi 360, a kiwi fruit orchard, based in Te Puke, 15 minutes south of Tauranga. One of the largest problems in the critique of the existing hut layout at Kiwi 360 is the lack of interaction with the physical environment. Living needs to involve an interaction with the use of the outdoors. Sleeping should be an inside activity while and everything else (cooking, cleaning, eating, and socialising) must involve a connection to the surrounding environment.

The existing army style huts accommodate four people but contain less than is required for daily life. The huts rely on the use of a very large separate central building holding all essential services such as cooking, eating, showering and entertainment facilities. The workers do not have the opportunity to interact and socialize in and around their individual huts as they are only used for sleeping. Other effects of having a communal hub or separate building include lack of privacy, lack of intimacy, a cleaner is required, and that there is no sense of ownership.
When visiting the existing accommodation it appeared that socialising and entertaining primarily happened between those who shared a hut, because people are more relaxed in their own space. There is a lost opportunity in the existing model to bring socialising back to each hut, where one can entertain in their territory. “A Transient Life” attempts to do this by bringing daily services into the individual huts.

At a camp site, most of the unplanned social activities happen around the tent as opposed to sitting in a cooking facility or in an open dorm. The types of people likely to be working and living this lifestyle are travellers who rely on interaction with others in unfamiliar places. The Kiwi 360 arrangement has few advantages except for the benefits of unplanned interaction in the central service building and the ability for more huts to be added around the hub. This project aims to introduce outdoor living into daily life by opening up the huts and individualising all the services.

This section relates to the need for an interactive social arrangement both around each individual hut and around a series of them. In the existing accommodation layout of Kiwi 360 the huts seem somewhat worthless as the central service building may as well have included accommodation. “A Transient Life” attempts to bring everything that a central service building offers back into the huts. This way, the workers can enjoy the privacy of their individual spaces and cooking, eating, washing and socialising with neighbours.

Layout Precedents
Other campsite arrangements provide information that cluster reveals that layouts have many advantages. Precedents include, army camps, traditional African villages and school layouts. By looking into these systems I have created a vision for a cluster situation that could be operated in New Zealand. Although it is eventually out of my control how the huts will be arranged, the project attempts to provide a better solution for community living, even when the huts are aligned in a row such as they are at Kiwi 360.
1.3 The Technical User Operation and Structure

This section relates to the structure’s ability to be transported and manipulated in different climates and sites and shows how it opens and closes.

The transient lifestyle is reflected quite literally in the architectural programme of this project. When the seasonal workers move, their shelter also relocates to service new occupants. To ensure maximum usage all year round, the architecture must be transported from orchard to orchard. (See appendix 1 for seasonal graph).

There are limitations to transporting/towing, whether it be a caravan, trailer, boat or other heavy load. When towing a semi-trailer such as a caravan, with a gross vehicle mass of 10 tonnes or less, there has to be a rear overhang up to 65% or 4m, whichever is less; to define ‘caravan trailer’.11 According to NZTA (New Zealand Transportation Agency), a standard light-weight vehicle should only tow up to two-thirds of the weight of the vehicle, to ensure the vehicle can stop safely.12 The structure I have designed sits in its own supported trailer, similar to that of a caravan chassis, and does not exceed the maximum road width dimensions of 2.4. If the vehicle and/or trailer exceeded the maximum safety requirements it would render the project uneconomical. To ensure the structure is able to be transported within the width and weight restrictions, materials are critical in the design.13


12.http://www.nzta.govt.nz/resources/glovebox-guide-safe-loading-towing/guide-safe-loading-towing.html#howmuch (Date Accessed 12-08-11), To tow something, a vehicle must be able to stop within seven meters from 30km/h.

13. http://www.nzta.govt.nz/resources/load-pilot-driver-code/docs/load-pilot-code.pdf, Pg 7 (Date Accessed 09-07-11). Safety requirements for wide vehicles and loads: • Travel restriction periods– Oversize vehicles can’t travel at normal peak traffic times. • Highlighting the hazard– Hazard warning flags and Oversize signs let other road users know about the size of the vehicle so they can judge their way safely past.– Lighting around the extremities of the vehicle means other road users can clearly judge their way safely past. • Advance warnings and instructions to road users. • Vehicles of a certain size are legally required to be piloted by a minimum number and class of pilot. The operator must make sure there are enough pilots, particularly if the road conditions are unusually difficult or restrictive.
1.4 Ownership

There are over 50,000 positions available on orchards around the country for anyone holding a New Zealand working visa. The huts are owned by the orchard owners. The workers come to the site and erect their hut in an area allocated to them, giving them the power to create their own environment. Several orchard owners around the country own more than one orchard and picking seasons vary, therefore the ability to use the same accommodation on different sites can prove cost effective. Summerfruit Orchard in Central Otago is one of the many companies that specialize in a range of different produce including cherries, apricots, nectarines and apples. Although this company is at their working peak during the summer season there is also work that needs to be done during the year including, picking, packing, pruning and planting. Many orchards are owned by the same company and supply both summer and winter fruit. Kiwi fruit and citrus are ready for picking in May-June, while apples, berries, apricots and nectarines are ready January-May. For a full fruit and vegetable seasonal guide see Appendix 1. Although the huts will be owned by the orchards and occupied by the workers depending on season, the huts have been designed to be a better choice than a tent or caravan as a means of portable architecture.

The nomadic life style can be enjoyed by all classes and nationalities. Many wealthy Europeans and Americans who travel to New Zealand for a peaceful working holiday away from their busy lives, find this type of work and lifestyle therapeutic. Other travellers come from overseas to work on the orchards in order send money back to their struggling families.

1.5 Length of Stay

The length of occupation and how often they are erected and dismantled is significant in regards to the operational technology employed. If the structure is up for a long time (two to four months) then the technology will be different to a structure that is dismantled and erected every few days. If the huts were erected every few days the technology needs to ensure that this process is done in a few minutes rather than a few hours.

The huts will be erected on the orchards for roughly two and three months while work is available. They will then be moved from location to location according to demand. Because the proposed structure is also suitable as a portable holiday home, it will be erected with ease and done so quickly.

The layout of several huts is also dependent on the length of stay. The huts are able to form a communal environment as there is the possibility of attaching a ‘long stay’ decking system. The long stay decking connection allows the huts to become more permanent, if desired. Decking is appropriate for use on orchards and also when used as portable holiday accommodation.
2. Definitions

2.0 Transient:
The term ‘transient’ often comes with the slightly negative connotation of homelessness, but for the purpose of this project the word refers to one who moves from place to place depending on work opportunities; and to those pursing leisure activities such as camping.
A person who is staying or working in a place for a short time only.\textsuperscript{17}

2.1 Traditional Nomad:
The term traditional nomad refers to an African nomadic architecture that will be discussed later in this document. Traditional in this case means existing as part of a long-established custom.\textsuperscript{18} Nomad refers to a person that travels from place to place to find fresh pasture for their animals who has no permanent home.\textsuperscript{19}

2.2 Modern Nomad:
In this project, the term modern nomad refers to an unorthodox traditional nomad. While a traditional nomad moves site to obtain food, a modern nomad moves site for work opportunities and to experience new surroundings.

\textsuperscript{17} http://oxforddictionaries.com/definition/traditional (Date Accessed 10-09-2011).
\textsuperscript{18} http://oxforddictionaries.com/definition/nomad (Date Accessed 10-09-2011).
\textsuperscript{19} http://oxforddictionaries.com/definition/transient (Date Accessed 10-09-2011).
3. Back Ground and Literature review

3.1 East Africa

In 2010 I visited East Africa for six weeks where I had the opportunity to visit a number of traditional Masai tribal villages. The people belonging to these villages are nomadic and live in simple but functional huts which are usually erected by women. The social community formed by a group of huts is important for this lifestyle and culture, as it provides people with protection from wild animals, while providing space for an outdoor social environment and areas to perform functions of village life.

NOTE: A further study and analysis of traditional African and nomadic architecture is described in the next chapter.

What interested me in these places were the huts themselves. To many western people the traditional nomadic huts could be considered a backwards way of life, in our forever forward moving world, but they hold many fundamental environmental and construction principles which might prove profitable for contemporary architecture in western countries. The scale of these huts is the key to their success. The scale governs and supports a lot of the buildings elements including materiality, structure, insulation, how many people can be accommodated, internal layout and most importantly it regulates how they operate both as a family and as a community. The huts rely on locally sourced materials, which at times are in short supply; therefore a small shelter is mandatory.

The hut structure protects people from the natural elements and wild animals and also provides privacy for each individual family. By using a small scale with small spans, the huts can be structurally tensioned through the use of fabric or animal skins.20

Most of East Africa is uninhabited, which leaves vast amounts of open unused space. The Masai people have what seems like unlimited land, yet they choose to build small shelters. Most design decisions are controlled by the scale of the huts including structure, materiality, openings and internal furniture. I realised that although we cannot live like this in New Zealand, we can still learn to live with less. From my visit to Africa, I recognise that this project will not resemble the traditional designs of African nomadic architecture but will instead show an appreciation for the art of living comfortably with a minimum of consumables.

During my visits to these villages I was able to acquire a small understanding of how these nomads live their lives, including where and how they cook their food, where the family sleeps, where they socialise and most importantly who is responsible for particular domestic rituals within and around the village. It is the role of the woman to erect the shelters, prepare the food and take care of the children, while it is the role of the men to tend to the animals and hunt. There is a huge separation between men and women in this culture. This way of life has many architectural and cultural implications which would not apply to New Zealand culture but they can help us to understand how different social layouts can be organised.

3.2 Traditional African Nomadic Architecture

O you! Who take the side of the townsman
And condemn the love of the nomad
For his limitless horizons!
Is it for their lightness
That you reproach our tents?
Have you eulogies only
For houses of mud and stone?
An on the day of the migration
When our camel litters are girted on the camels
You would think it a field of anemones,
Deepening in the rain their richest tones.

Emir Abd-El-Kadar

World history and the history of its peoples is full of references to nomads and tent hut-like structures. We have learnt and developed from this rich history. For example, the lightweight modern dome tents today used by campers and hikers relate back to the the form of South African mat-covered armature tents. Traditional African architecture has never really been associated with structures designed by trained architects even though we claim to look at primitive architecture and history as a means of moving forward.22 A lot of African architecture relates to the River Nile as it is the main source of water in the north east section of the continent. Therefore early African architecture talks largely about the ancient Egyptian civilization. The first migrating nomads in the Nile Valley initially built tents as houses.23 Tents were originally made from animal skin, then from matting, then finally from patterned fabrics.24 “In the world of Nomadism, it has traditionally been the role of the women who have the responsibility for creating, erecting, maintaining and dismantling the domestic environment.”25 The same building equipment and materials are collected, processed, and put together by women. “Hence both the houses and transport systems are an extension of the gender division of labor.”26

The structure
The structure of these tents, and most nomadic forms of architecture in Africa and around the world, can be broken into two basic parts; tensile structures and armatures.
Tensile refers to a centre poles or a system of poles
Armatures refers to stretched fabric or other types of membranes.28

23. Ibid, pg 22.
25. Labelle Prussin, African Nomadic Architecture, Space, Place and Gender, Smithsonian Institution Press, 1995, Pg, 46.
26. Other nomads that employ the use of this structural system include: Bedouin nomads, Mongolian nomads, Pastoral nomads, Monastery nomads and Norwegian nomads.
27. Labelle Prussin, African Nomadic Architecture, Space, Place and Gender, Smithsonian Institution Press, 1995, Pg, 54.
28.Ibid, Pg, 54.
When the membrane is stretched over the poles it supports the structure (poles) and the poles hold the membrane in place. This methodology is used in most contemporary tents today. Designers have taken the fundamental construction principles from nomadic architecture to develop a new model, which is also what this project aims to do. Although the core language of African nomadic architecture will not be literally translated in my design, in the obvious way that a modern tent does, the project will benefit from and be enriched by this rich history.
3.3 Gender

This is a gender based project which I consider to be a very relevant issue as most other forms of architecture including the tent, the caravan, motor-home, the boat and the bach are all male orientated. The hut can be operated, erected and dismantled by a woman therefore the technology used must be easily operated and light weight. This is not to say that the huts are only to be operated by women and never men, nor am I saying that “even” women can use the hut, but instead it is implying that this is a structure that has been carefully considered to ensure that men do not need to be relied on. Women operate and set up camp in traditional nomadic situations, for example the African Masai tribe, where it is traditionally the role of the men to collect the food and tend to the livestock. This is not how we live in New Zealand today, as men and women have similar value but even so, there are still many areas, including architecture that are predominantly male-based. This is an opportunity to create a temporary transportable hut that entertains the idea that they are be designed as much for the use of women, as for men.

There is a real issue of gender when it comes to talking about architecture, and this issue has been argued by many including, Jane Rendell in her essay on the gendering of architectural spaces. In this essay Rendell explores her interest in “how issues of gender were raised in connection with the public spaces of the city.” Although Rendell talks about the gendered spatial relationships within a city, the argument still references principles that can be applied to any architectural space. Rendell argues that “gender differences are articulated spatially, through relations of movement and vision: moving and being-moving, viewing and being-viewed, consuming and being consumed, exchanging and being-exchanged, displaying and being-on-display.” Architectural spaces can either be read as male or female. How can this project be read as female orientated? The answer relies on the technology employed to erect and dismantle the hut. Because the mechanism used is easily operated and maintained, it exists without the use of men and heavy labor.

Jane Rendell talks about how public city spaces are predominantly read as masculine spaces, while the private home spaces are seen as feminine spaces.

30. Ibid, Pg 136.
31. Ibid, Pg 136.
3.4 The Modern Tent + Services

The tent has always been the immediate and usually the cheapest form of portable shelter used in New Zealand during the summer. A tent can be taken just about anywhere and can be pitched on most terrains. Although the tent makes a cheap easy shelter, it has many disadvantages. Problems include lack of insulation, lack of head height, no water collection or supply, no electricity, limitations on length of stay, no storage, no floor, and very little sense of security. The tent is a simple, useful, and easily transported unit for a nomadic person but it lacks the essential services indicated in section 1.1.

‘A Transient Life’ is based on some of the ideas and philosophies used by Archigram in their project, the Plug-in City. The Plug-in city project was a combination of concepts and ideas that were formulated between 1962 and 1964. 32 The idea was that ‘In order to survive we must invent new artefacts, new situations, and regard shelter or urbanism merely as a term of reference that does not demand a ‘house’ or a ‘city’. 33 The plug-in concept evolved around a series of net works (the city) that one could plug into. Services are all that is needed, you just plug in to them. A Transient Life also evolved from the concept of movement and being able to simply just plug-in.

33. Ibid. Pg. 1.

Right Image: Mobile home on the road, Kansas, USA.
4 Design Process

4.1 Formal Concept

The design of this project has been influenced by the idea of two realms divided by a 3m x 1m wall. The public and private realms split the hut in two, in order to create an environment that hosts both the outdoor environment as well as a place to retreat. The private or back end of the hut is enclosed by medium-weight canvas sides and closes off the sleeping platform from the public. The public realm (on the other side of the wall) hosts all daily activities including cooking, eating, cleaning, socialising and entertaining. This concept introduces and influences one’s relationship with the surrounding environment and connects the users to outdoor living.

This way all needed services are brought into the hut (services mentioned in chapter 1.1) to give a sense of ownership to the seasonal workers and a sense of independence and mobility to holiday makers.

The arrangement of several huts allows for clusters of four to eight huts creating a square. Such a layout allows the occupants to have a semi-enclosed central outdoor area to socialise in, while the private end of each hut faces away from the general congregation. People can easily socialise in and around their individual huts and when desired, they can retreat into their private realm.
4.2 Arrangement of huts

A major aspect of the project is that the huts can be multiplied to create a village/community so that the occupants can interact and socialise. This design contradicts the existing hut arrangement by allowing all domestic and social activities to occur in and around the huts while still allowing each dwelling to have a private and public realm, thus creating a relaxed, casual environment. A sense of separation between the public and private areas of the huts needs to be made visually clear without completely shutting off the public realm in the way that tents and caravans do.

Campsites have similar organisational issues to cities and towns, such as privacy concerns, crime, transportation, and proximity to employment facilities. Although the layout of these huts is designed in a much shorter time frame than a city or town, both layouts need to allow for expansion. One of the most common ways of creating campsite layouts is to produce clusters. Clusters facing inward provide a communal entertainment and social space in the centre, while providing the means to retreat into a private space. Creating small clusters of huts occupied by only a few groups should encourage ownership and better maintenance, and in doing so this should reduce crime.34

The initial concept for the project was to employ folding technology and a means of opening and closing the hut. Each component can be folded down so the hut can be transported.

This collection of images demonstrates the process of folding architecture, collapsing the hut into a small manageable package for transportation. It is based on the idea that the hut has a solid base, from which a folding shelter is pulled out. The low-tech mechanism used to fold the structure up and down relies on the use of large hinges. This method however proved hard to manipulate by women or men, due to the effort involved in unfolding such large sheets of material. The project took the form of an arch as it has many advantages including resolving some of the issues of water management.
Unfolding the structure
This concept explores the idea of the structure unfolding of a membrane which is attached after which would enclose the hut making it weather proof. This model was made straight after the previous model, which also failed to grasp an understanding of how heavy it would be to pull a structure of this size (even though it is on a small scale). The model relies on the technology of pins and pivots to assist in the movement of the structure. The advantage of this system is that it has the opportunity to be compacted into a small enough object for someone to lift and put on a trailer.
Unfolding the structure
A new mechanism of aerial telescope technology was investigated to replace the folding system. This technology is very simple in its construction and use, but complex in its movements and enables the hut to be erected with very little strength required. If the structure does in fact become too heavy to simply crank out, a small ram could be used.
This was an attempt to create a structure that employs the idea of telescope technology. It uses a half arch which can be cranked open and closed from the base, which then acts as the water tank. The structure of the hut is pulled out and a ‘skin’ membrane is stretched over for protection from the elements. Water-filled frosted white quilting to form the skin was considered at this early stage for insulation purposes, access to solar heated water, and as a means of letting light into the space while still covering it. The skin is like a snake skin scale system, which also reclines back in the same fashion that the structure does.

The top image shows the base of the hut, detailing the water tank down the side of the structure. Having the water tank in this position means it acts as a footing for the hut. It is placed on the curved side of the structure, allowing the easy collection of rain water.
Tv/Telescope Technology
This model had very little relation to the technology that would be used to erect the hut. In saying that, it indicates the level of complexity I would like to see within the structure. The structure allows the walls to become shelving, where the occupants can temporary personalize the space. The end product would be much more resolved in terms of structure, but this model has led me look closely at the structure and use it not only as a means of support but as an aesthetic element.
Structure and footing detail
When looking at the project in perceptive at this point, I could see it lacked the link between the actual design and the purpose. One could argue that a structure like this would be too elaborate for its purpose as a shelter for orchard workers. The structure was leaning more towards a second home for the middle class person who doesn’t want a gigantic beach house but would rather leave a lighter foot print. Because this project was designed particularly for the nomadic seasonal worker it meant that it needed an adjustment. Like the existing huts at the Te Puke kiwi fruit orchard, the project lacked the interaction between huts and the physical environment. The idea was set from the start that there was to be no need for a communal hub, so this project is an opportunity to abolish the service building and bring the intended social interaction into each hut.
Utilizing the hut to its maximum potential means that it will perform as a place for daily rituals. A chance to interact with others from the huts creates a more relaxed attitude and therefore a more successful socializing environment. In almost all situations where this type of architecture is needed eg, orchards, camping, touring the country, temporary housing, the physical environment has been a place for socializing. Indoors has been the place where private domestic activities such as sleeping happen. For example if you are in a traditional camping situation and would like to socialize with others next to you, you would not all sit in their tent (indoors), you would sit around outside. Outside is the mutual territory where everyone can be entertained. Extending the theory that the hut will have a private space and a public space ensure that the service building is out of the design.
This was a first attempt to model the use of the outdoor area, using a wall to separate the two realms, public and private. All elements of the hut fold up or down to complete a solid wall, which can be attached to a tow bar for transportation. The caravan has traditionally added ordinary domestic fittings to create storage, whereas the hut will solve the issue of storage architecturally. The wall acts as a structural element, but leaving the structure exposed means that the occupants can store their belongings within it.
The water tank is used to balance the structure and will be connected to the roof which has been specifically designed to collect water. The tent has a traditional apex roof form, where I am proposing the opposite, a ‘V’ shaped roof to collect the rain water.

The hut sleeps two people on a hung platform 1.2 meters wide, which can also be used as a desk if needed. Extra mattresses can be put under the sleeping bunk for children.

Not only was a further study of the wall needed but also how it operates to be it opens and closes is an essential element in the project as it needs to be able to be operated by women. It has to be lightweight and able to be quickly erected and dismantled.
Transportation
The folded, closed wall will be transported vertically on a permanent trailer that sits under the hut while it is erected and occupied. Without an attached trailer the wall has a tendency to tip in the wind so integrating the trailer in the wall allows for a structural system to stabilise the wall while closed or opened. Because the wall will be transported vertically, it needs to withstand bumps and pot holes on the road without tipping.
This model shows a second attempt to gain an understanding of how the hut will stand when unfolded. It was almost easier to work backwards by modelling how the hut was to look opened up then resolve how it needs to fold in order to be transported. This model shows a stepped outdoor decking which accommodates the water tank. The models and drawings have remained very sectional in order to show both the private and public realm divided by the wall. The roof over the sleeping side (private realm) is a solid lightweight roof that connects into the top of the wall and is supported by an angled pole connecting to the public decking. There is a transparent awning that extends over the public side of the hut for protection from rain, but most of the time this awning can be rolled back to enjoy the benefits of outdoor living. There needed to be a door through the wall, allowing direct access to either side of the hut. This change in the wall resulted in the next model. This wall is a better proportions measuring two metres at the wall end, by three metres wide.
As mentioned the structure of the wall is crucial as it is key to all storage, therefore a study of each elevation is needed in order to explore the possible arrangements.
The wall closed up measures one metre large enough for a section of the wall to be emptied out to accommodate for the chemical toilet and shower to fit into. Boat design and aircraft lavatory design is helpful for the understanding of WC and showers in tight confined spaces. Aircraft lavatories are extremely compact but generally do not include a shower, but instead host other services such as electrical outlets, vanity units and call buttons. Both yacht and aircraft toilets have one major element in common apart from being in compact units, they also have to expend the waste strategically. Aircraft essentially run on a chemical system that is flushed out at the destination. Where an aircraft has a storage unit for the collection of waste, the typical yacht toilet simply discharges the waste out to un-restricted waters. Most yachts also have a small storage tank for the disposal of waste while within a restricted water zone, which is connected to an automatic or manual pump.

Material Study

Bamboo 1 ply

Bamboo Sandwich Panel Plywood

Translucent sheet material
Material study

All aspects of the design unite to tie the hut into the portable element it is. One of the crucial design decisions is the materiality plate. All materials used must be strong, durable, water proof and most of all lightweight in order to provide ease of transportation and operation. The hut will use timber where needed, for example, in the deck, the flooring and the basic square structure. Bamboo timber is an extremely lightweight and strong hardwood material that can be rolled out into panels of one ply, sandwich panel and multi ply panel. The multi-ply panel is fabricated using multiple layers of bamboo and can be either horizontally or vertically pressed. Bamboo is 30% harder than oak and is resistant to mould, termites and warping. Bamboo can replace most timbers and can be made water resistant into natural or carbonized bamboo plywood.

The roofing will be a corrugated, high UV resistant, translucent sheet material. Topglass Ultra, manufactured by Alsynite NZ Ltd is an example of a weather-tight translucent roofing material fabricated out of anti-static glass fibre rovings. The sheet material will assist the water into the gutter to be collected in the water storage tank underneath hut. It is a very light weight material, insuring ease of opening and closing. Pine timber will be used to support the translucent roofing.

Much of the internal shelving will be constructed using a PVC panel material. PVC is lightweight, relatively durable and when used appropriately it is strong enough for the shelving in this project. ‘Professional Plastics’ and ‘Modern Plastic’ both supply internal PVC sheet material that is suitable for shelving. Plastic can be fabricated in just about any colour, thickness and surface finish.

Images:

37. Ibid (Date Accessed 19-09-2011).
There was much talk about the procedure that will be used to operate the butterfly roof. The strong theory (seen in previous drawings) was that the roof sections will be held up by means of a wire or multiple wires. This operation was rejected on the bases that it would not allow each roof to close down again after erecting. There needed to be a better way of opening and closing the roof. Gas struts similar to the struts used to open and close a car boot was included into the design to replace the wire. This technology would be simple and light enough for women to operate. Research concluded that there would need to be at least two gas struts in order to hold the weight of the roof. If the struts connect to the ends of the huts it will create the same head height problem as a prop would. The problem would restrict one from stepping off the side of the decks if they needed to. Two compensate for this, the gas struts could be connected to the inside face of each side of the wall.

After much discussion, the butterfly roof will be simply propped up and supported on poles, a simple, lo-tech solution.
4.4 Water works

The hut collects and provides its own water through the use of a butterfly gutter which drains the water to a clean water tank under the hut (blue line), this is then distributed by means of a small pump, to the toilet sink, shower and kitchen sink. Waste water will be collected in another tank under the hut (brown line), which will be emptied when appropriate through a side hatch.
Summary

A Transient Life celebrates the need for a transient form of architecture to include its physical surroundings. The outdoor environment is welcomed into the public realm of the huts where the seasonal workers or holiday makers will complete all daily rituals including, cooking, cleaning, eating, socialising and entertaining. The public and private realms separated by a three metre by one metre wall allows the occupants to entertain on familiar territory while still having the luxury to retreat into a private enclosed sleeping section. The project follows similar services guide lines as Archigram’s ‘Plug-in City. We should not be reliant on a home but instead rely on only services. This project is similar to a tent or caravan but instead it includes the modern services (such as the internet, water supply and collection, electricity and soil waste disposal) we need to comfortably complete a day.

A Transient Life is how we can live with less...
Daily Rituals


Road User Rules

Definitions
http://oxforddictionaries.com/definition/traditional (Date Accessed 10-09-2011).

East African Study


Labelle Prussin, African Nomadic Architecture, Space, Place and Gender,


Gender

Literature Review


Material Study

http://www.nuralite.co.nz (Date Accessed 26-09-2011).
Appendix 1

Graph located from: