

CLIMATE CHANGE - CHILDHOOD C
EPIDEMICS - NUTRITU
MACRO ECONOMICS - SOCIAL PC
TRADE AND TRANSPORT DEPARTMENT - PUBLIC U
AGRICULTURE AND WATER DEPARTMENT - E

3. UNDERSTANDING

This section describes how the dissertation question is going to be answered: through gaining an understanding of how food choices are influenced and analysing the Alaskan context where-in that knowledge must be applied.

3.1 EATING AND LANDSCAPE ARCHITECTURE

There is not much written on the topic of landscape architecture's influence on food choices. The primary applicable academic focus is on small scale environments which influence food choices and intake, as well as health and obesity, in unconscious, yet pervasive ways (Sobal & Wansink 2007:124). Sobal and Wansink (2007:124) suggests that '[re]engineering built environments may offer opportunities to shape food intake'.

When one looks at the larger landscape scale, writing indicates symptoms and effects of food on landscape but not causal relationships of landscape on food. Potteiger (2013:261) speaks of food developing from and forming with landscapes' ecological, social and spatial processes, yet he does not suggest the opposite.

There is writing on what certain types of environments do to consumer patterns. Consumer Sciences is a large field but has paltry offerings when asked to explain the influences landscape architecture has on eating.

Figure 14 Influences on food choices from large to small scale (Author 2015)



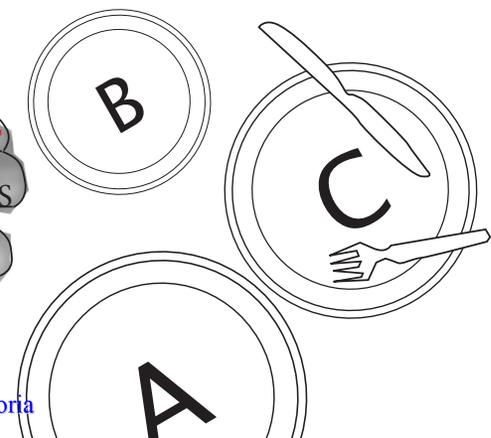
Most of the writing relating landscape architecture and health comes in the form of psychological studies done in hospitals' gardens. Theories range from the ontological to the physiological as to why certain environments facilitate healing. One that is popular amongst landscape architecture practitioners is the Cognitive School Theory. It states that 'instorative' environments restore a more positive view of the user's self and the user's capacities. It claims that an environment that corresponds with the preferences of the user tells the user that he is a part of a world of meaning (Grahn & Stigsdotter 2002:63).

The lack of conclusive literature on designed landscape's impact on food choices makes it necessary to delve into the root causes of eating decisions and build up arguments for the influences of landscape elements on food choices from first principles.

3.2 FIRST PRINCIPLES

The presence of other people at an eating occasion or when choices are made about food has a powerful effect on behaviour.
~ Suzanne Higgs 2015:42

Looking at the list of food choice influences (Figure 14) it was decided to focus on the purview of landscape architecture, from the eating equipment scale such tables and seating up to the neighbourhood scale. Anything bigger becomes the prerogative of town planners, councils, municipalities and eventually politicians and economic forces.



3.2.1 OTHERS AND EATING

Humans have evolved a strong capacity to learn from the behaviour of others. We find approval reinforcing and disapproval repelling. We follow norms more easily when we are uncertain or when we have a stronger shared identity with the norm defining group. Social norms can influence food choices by changing your self-perceptions or through changing the sensory evaluation of food. Eating something that we have seen others eat and enjoy creates the same enjoyment pathways in the brain as eating something that we actually enjoy (Higgs 2015:42).

3.2.2 IDENTITY AND FOOD

A study by Hansen and Thomsen (2015:109) has shown that ‘personal food identity’ (the extent to which consumers believe that their health identity is linked to their food patterns) can aid in increasing healthy food consumption. This is due to personal food identity being positively linked to involvement, i.e. the self-signalling capacity of food consumption should be stressed—consumers should be prompted to engage their food patterns so as to reflect a desired identity (Hansen & Thomsen 2015:114).

One creates and reinforces a food identity by the food one chooses to eat, as well as the preparation techniques one chooses to use (Bisogni *et al* 2002:129). Because a healthy and fit body has become equated to discipline and self-control, food practices can reveal people’s socioeconomic status and knowledge—one can view a person’s identity interacting with their environment through their food practices and patterns (Bisogni *et al* 2002).

3.2.3 ALASKAN IDENTITY AND FOOD

The destabilisation in identity and cultural norms when transitioning from a more rural and traditional setting to an urban, consumer driven one, makes people prone to poorer food and health related decisions. Yet, according to the managing director (Kriel 2015) at an NGO in Alaska, Viva Village, there is not much original cultural heritage or identity left in the inhabitants. Most

are third generation urbanites who aspire to modern Western consumer ideals (Kriel 2015).

Also, a study reported that ethnicity’s influence on food choice is highly variable (Bisogni *et al* 2002:135). Ethnicity does not influence eating habits directly, but rather influences ideals, identities and roles, which interactively determine the food choice process (Devine *et al* 1999:86).

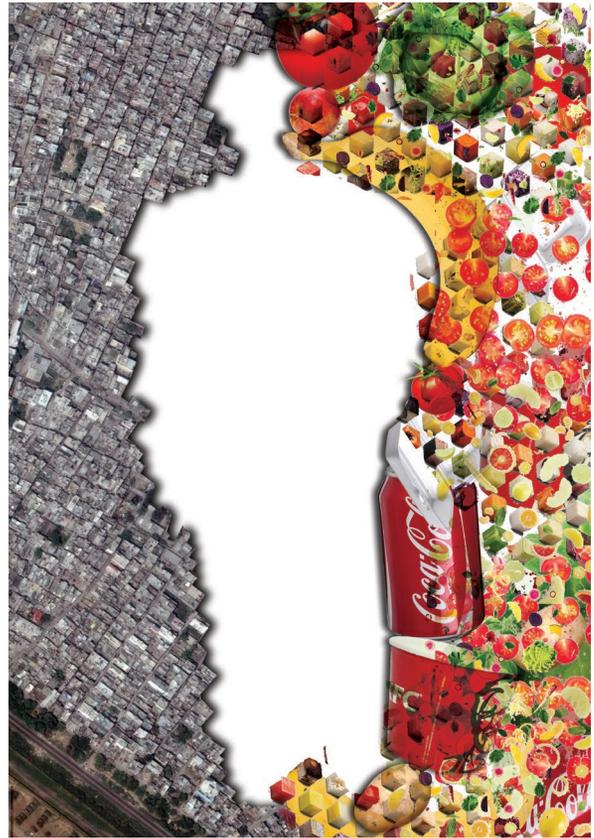


Figure 15 Man as defined by his built environment and food environment (Author 2015)

3.2.4 COGNITIVE FATIGUE

The food choice of the individual is dependent on many influences, most of which go by without us noticing. Humans tend to rely on heuristics when making purchasing and preparation choices. We go through a plethora of considerations, from familial duty, cultural identification, perceptual factors, desired identity to ideals, roles and health. Yet doing this requires energy and higher level cognitive effort which leads to cognitive fatigue and more spontaneous and

heuristic food choices. The heuristic routines of fast food decisions are mainly shaped by environmental cues including appearance, familiarity, size and price (Cohen & Babey 2012:767).

More impulse based and aggressive marketing for low nutrient and high energy foods are prevalent in poorer neighbourhood supermarkets when compared to more affluent neighbourhood markets (Cohen & Babey 2012:774). Stores focus energies, in descending order, on merchandising, accessibility, reputation, in-store service, store atmosphere and finally promotions (Thang & Tan 2003:199). So when Alaskan's shop at a Score Supermarket or Pick n Pay, they are influenced by impulse marketing and make poorer consumer decisions.

The alternative, to have more food shopping in Alaska has its obstacles as different contexts become associated with certain qualities of food and particular eating occasions (Liu *et al* 2014:199). This is the underlying functioning to the 'perceptions of quality and safety with regard to informal vendors versus chain-stores' (Food Safety Mini-Symposium 2015). The local perception of the stores in Alaska needs to be the same as that of the chain stores for them to be used more frequently.

Humans are dependent on, amongst others, environmental cues for food decisions thus partially answering the hypothesis question. The next step is to synthesise these principles into a form that can be applied to a designed landscape.

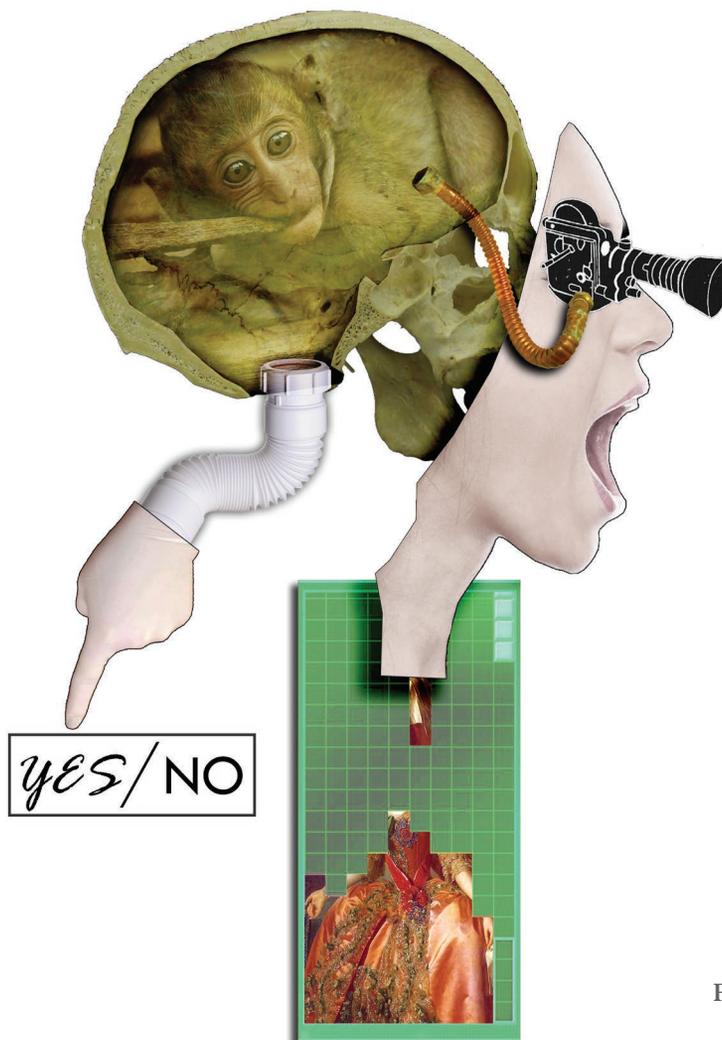


Figure 16 Human heuristic eating machine (Author 2015)

3.3 OPEN EATING TOOLBOX

The fact that almost all food consumption occurs within the context of the built environment makes one blind to that which is ubiquitous and pervasive around you: the street or kitchen you are in, the table, chairs, specific objects—all of which influence and shape food intake. The immediate built environment can distract self-monitoring of eating, increase awareness or tempt with convenience. The immediate environment may give hints as to social norms or appropriate consumption and does so through unconscious influence. Influence can occur when we miss the landmarks or cues in our setting that frame perceptions, for example distractions in a restaurant lets one eat more than one would normally. There are even some environments that contain scripts that alter behaviour to the extent of what to eat and how much. There are multiple behavioural influences and they interact with each other or individually under specific conditions (Sobal & Wansink 2007).

Using the principles mentioned above an Open Eating Toolbox (OET) was developed. It uses the behavioural particulars of our eating choice processes and proposes a built environment application to each one, creating several behavioural tools. These behavioural tools were found to be sensitive to other environmental cues and influences. For example, priming only works when one is exposed to the sensitising element. This is unlikely to occur if the priming element is a high billboard but the road passing it is so eroded that one concentrates on the ground when walking by and misses the billboard. A section for tool prerequisites and physical aids was introduced to increase the behavioural and anti-cognitive fatigue tools' efficacy.

The tools are laid out on the following pages according to Figure 17.

Specific section of OET
Tool name
Tool image
Tool description
How the tool works
Where to apply and/or example of application
Illustration of examples

Figure 17 Layout of OET tools on following pages (Author 2015)

PREREQUISITES

SALUTOGENIC ENVIRONMENT

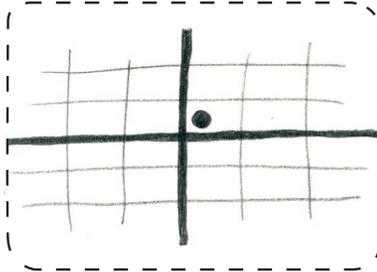


ACCESSIBLE & COMFORTABLE;
ORIENTATING & LEGIBLE; CLEAN

Hierarchy of interventions: for the finer food influencing elements to work, they cannot be overshadowed by stronger influences such as access or stink revulsion.

Urban planning.

LOCATION



CENTRALLY LOCATED, EN-ROUTE

Place healthy food in readily accessible and central location or at least as close as possible as next unhealthy food competitor.

Urban planning.

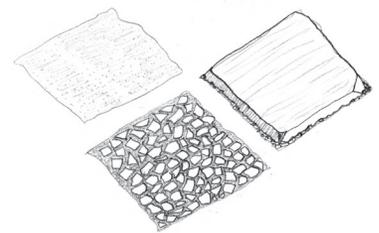
TRAVERSABLE SURFACE



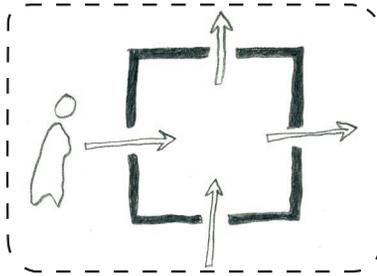
EASY ACCESS, MINIMAL SLOPE, DRY,
COMFORTABLE TEXTURE

In a site that has poor pathways and streets a comfortable and safe surface would be preferred by users—giving one more influence over traffic flow.

Rigid paved surface in the form of roads, ramps, stairs and terraces.



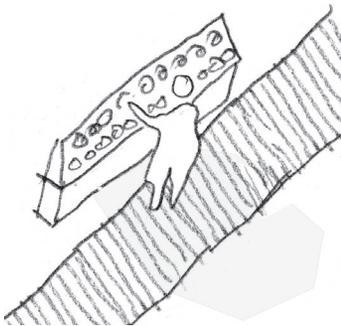
ACCESS



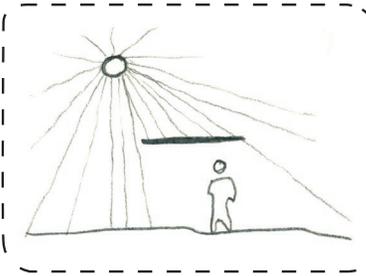
VISUAL & PHYSICAL ACCESS TO CERTAIN FOOD

The larger the access is to a food, the larger its consumption.

Food available on street front.



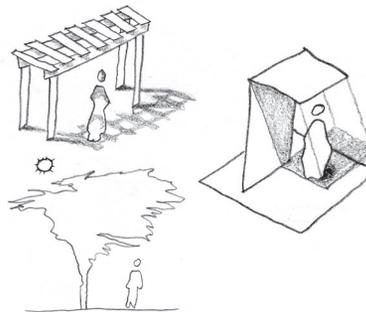
SHADE



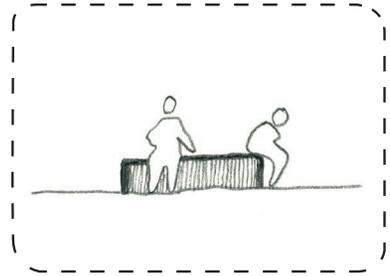
PERGOLA, ROOF, TREE

Anyone walking long distances between work, stores and home needs respite from the harsh South African sun.

Provide immediate screen from sun in form of tree, roof or pergola; along desired stops in street.



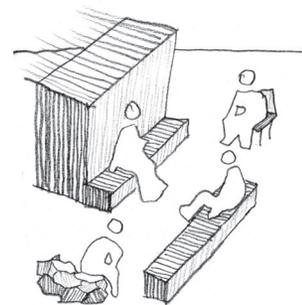
SEAT



BENCH, CHAIR, LEDGE, ROCK, LOG

Anyone walking & carrying items long distances between work, stores and home needs an opportunity to rest their legs.

Multiple points of rest at desired stops along a route with larger resting areas serving as social hubs.



PHYSICAL TOOLS

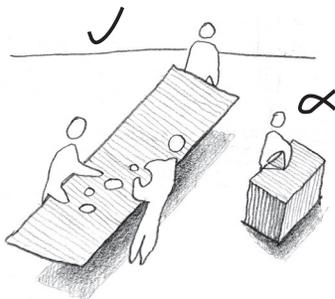
TABLE TOP



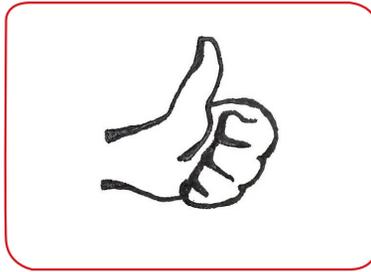
SITTING & STANDING HEIGHT FLAT WORK SURFACE

Healthy foods require preparation. Influences through social norm dissemination when surface is shared.

Hard wearing, accessible, no-frills working surface.



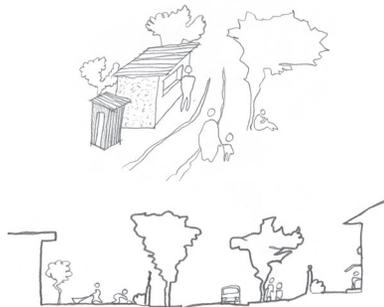
FAMILIARITY



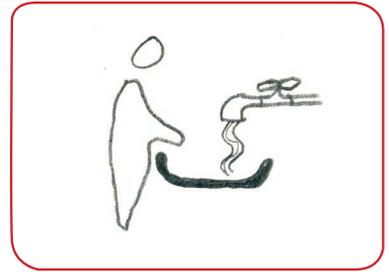
SIMILARITY TO USER'S FORMATIVE ENVIRONMENT

Environment corresponding with users preferences gives basis to user feeling part of that environment.

Use similar materials from site's environment.



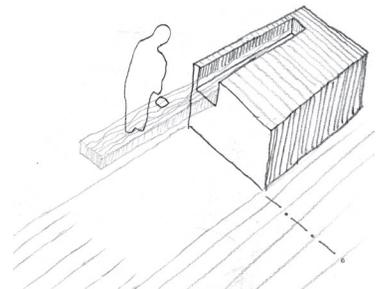
WASH BASIN



DEPRESSION SUITABLE FOR WASHING AND RINSING OF ITEMS

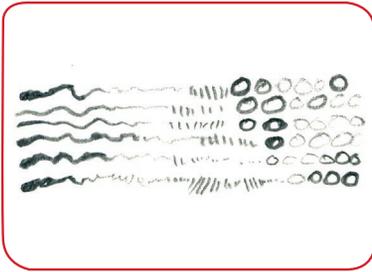
Healthy foods require preparation. Influences through visible sanitation use.

Try to utilise sustainable water in conjunction with anti-cognitive fatigue.



BEHAVIOURAL TOOLS

NATURAL COLOURS AND TEXTURES



STONE, GREENERY, BUSHVELD TEXTURES, TIMBER, NO SYNTHETIC SURROUNDINGS

Breaking association of bright coloured fast-food store adornment with acceptable foods.

Use what the site has and emulate anti-cognitive fatigue patterns.

GENERAL ONTOLOGY

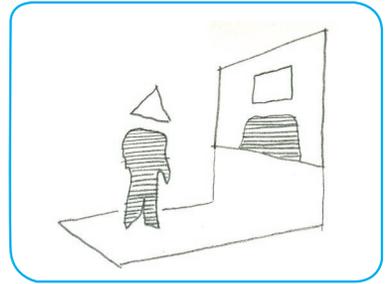


WANTS TO PURCHASE FOODS AT LARGE COMMERCIAL SUPERMARKET

General perception that an established, formal supermarket will provide better quality foods when compared to small, informal vendors.

Urban planning: create similar shopping experience on site.

MAGIC MIRROR



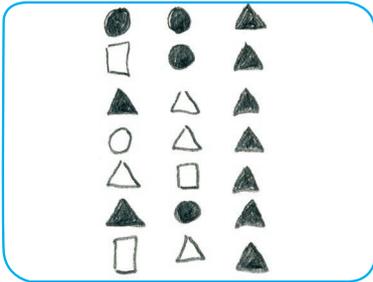
SELECTIVELY FACILITATE IDENTITY BUILDING

Food is a large part of personal identity reinforcement. Allowing for an altered, healthier reflection will engender striving towards a healthier, desired identity.

Recreating the desired built environment (affluent suburbia).



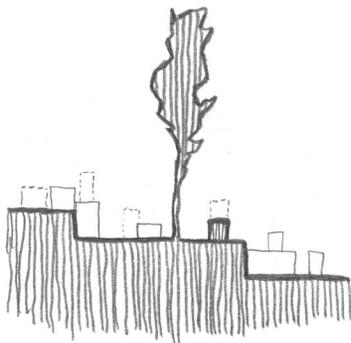
CONSISTENCY



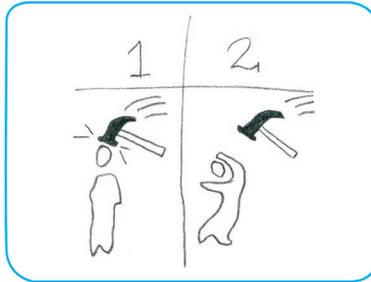
MAKES PLANNING TO EAT, EASIER

Physical and temporal orientation leads to healthier, better planned eating events and less unhealthy, quick-fix meal events.

Same design language from start to finish. Create orientating markers in landscape.



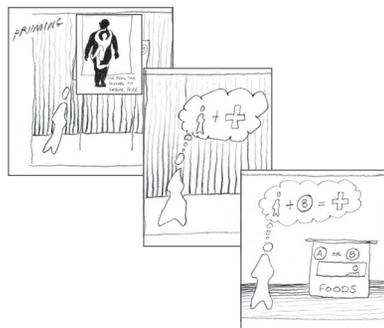
PRIMING



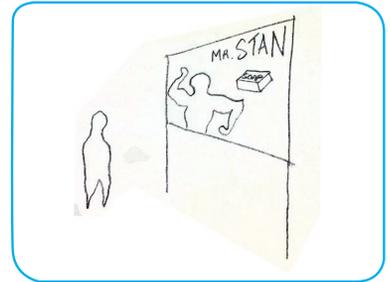
MAKING SOMEONE MORE AWARE OF OR SENSITIVE TO SOMETHING

One can be set-up or primed in a particular fashion before making a specific choice through environmental cues shortly before making said choice.

Placing fresh produce and clear water prior to arriving to purchase/prepare food or have fruit trees bear edibles throughout the year.



CONDITIONING



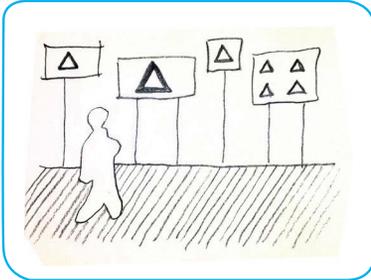
A LOGO/SIGN ASSOCIATING GOOD FOOD WITH ANYTHING

Pairing of stimuli so that characteristics of one are transferred to the other.

Placing the healthy store next to popular place so that the two become paired.

ANTI-COGNITIVE FATIGUE

MERE EXPOSURE CONDITIONING



'HIDDEN' CUES ASSOCIATING A GOOD LIFE WITH HEALTHY FOOD

Seeing something repeatedly makes one preferential to it.

Always have leafy greens, vegetables and fruit growing or on display in site.

COGNITIVE FATIGUE AWARENESS

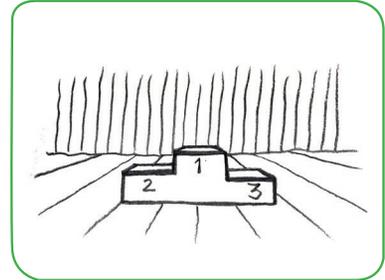


CREATE ENVIRONMENT THAT DOES NOT OVER STIMULATE AND SENSITISE THE USER

Making decisions tires the higher level brain functions leading to impulsive, automatic, often poor food choices.

Framework and design elements are not to be confusing, are to be legible and simple.

SELECTIVE MINIMALISM



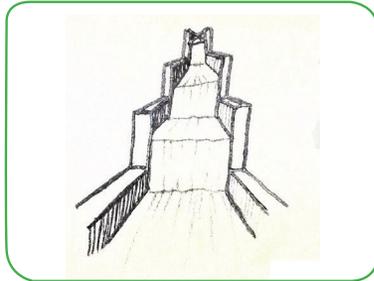
LESS CHOICE, NOT BETWEEN HEALTHIER FOODS

Making more decisions eventually leads to more impulsive choices. Though more choice amongst the same healthy plethora can lead to more healthy choices.

Inundate with healthy food choices. Enclose with healthy foods.

MEAL 8
MEAT 1 + STARCH 1 + VEGETABLE 1 + SALAD X
MEAT 2 + STARCH 2 + VEGETABLE 2 + SALAD X
...
VEGETABLE 84 + SALAD X

WATER



FLOWING WATER

Less cognitive strain equates to more chance for a prudent food decision. Water is relaxing and a 'low gear' for the brain.

Flowing, splashing and twisting water on site.

FIRE



FLICKERING FLAME

Less cognitive strain equates to more chance for a prudent food decision. Fire is relaxing and a 'low gear' for the brain.

Flickering and dancing flames that are safely and comfortably approachable.

3.4 ALASKA, MAMELODI

The Open Eating Toolbox is a generic means to aid design decisions when trying to influence food choices of individuals. To achieve more success in behavioural change one should focus on existing behaviour

instead of ideal behaviour (Schwerin 1982:1325). Thus understanding Alaska's specifics will allow for a better application of the OET.



3.4.1 HISTORY

Alaska is an informal settlement that was on the eastern most periphery of the Tshwane municipality until the municipal boundary shifts of 2013 included more wards into Tshwane. It settled in 2007 when forced evictees from an adjacent piece of land began to move onto the slopes of the Magaliesberg range. A subsequent eviction attempt from the municipality through a third party security agency, a short while after the first eviction, led to violent protests. Two security personnel were killed and their vehicles torched (Eye-witness 2014). There have not been any further attempts to remove the settlers from the mountain side. Alaska has grown in numbers and is now estimated to contain between 20 000 and 40 000 inhabitants. Most of those living in Alaska are migrant workers from Limpopo and Mpumalanga looking for opportunities in Tshwane's urban centres.

Figure 19 Alaska from the South in March (Growar 2015)



Figure 18 Diagram showing Alaska's rapid urban sprawl across the Magaliesberg slope (Author 2015)



Figure 20 Sections and primary routes into Alaska with eating street in blue (Author 2015)

3.4.2 PERMANENCE

The transience of informal settlements determines whether a project will be present for long enough to make a difference or will be scrapped when the settlement is relocated. In 2015 the municipality started to request proposals for new sewerage lines and water supply within Alaska (Figure 21 and Figure 23). Mamelodi East's Urban Hub Development Strategy Report has mixed messages about Alaska as some images include Alaska and some do not (see Appendix 2). Considering the rate at which Alaska has expanded (Figure 18) and the government housing backlog, 2.3 million (Presence 2014) it does not seem likely that Alaskans will have alternative housing made available soon. Considering all of the above, it is safe to assume that Alaska will not be removed.

3.4.3 CONDITIONS

The leaders sold stands large enough for a small home for R1000 each, which included an illegal municipal

water connection the leaders connected to each stand. This informed the grid-like layout. Electricity is the new home owner's prerogative and illegal connections known as *isenyoka* ('snake' in Sepedi) are maintained by those with electricity connection knowledge. The municipality regularly arrives to disconnect them but this has caused protests and people thought to be interfering with Alaska's supply have been violently



Figure 22 Illegal electrical cables called *isenyoka* between a building corner and tree (Author 2015)

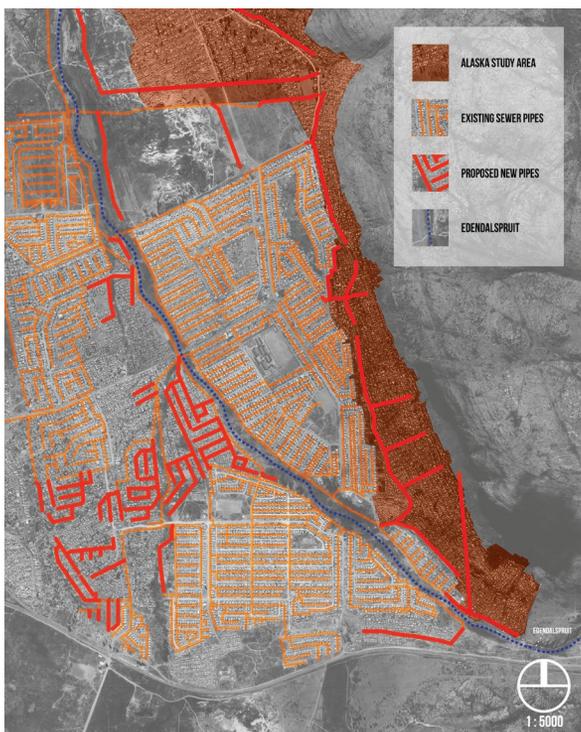


Figure 21 Proposed new sewerage piping including Alaska in red (HONS 2015)

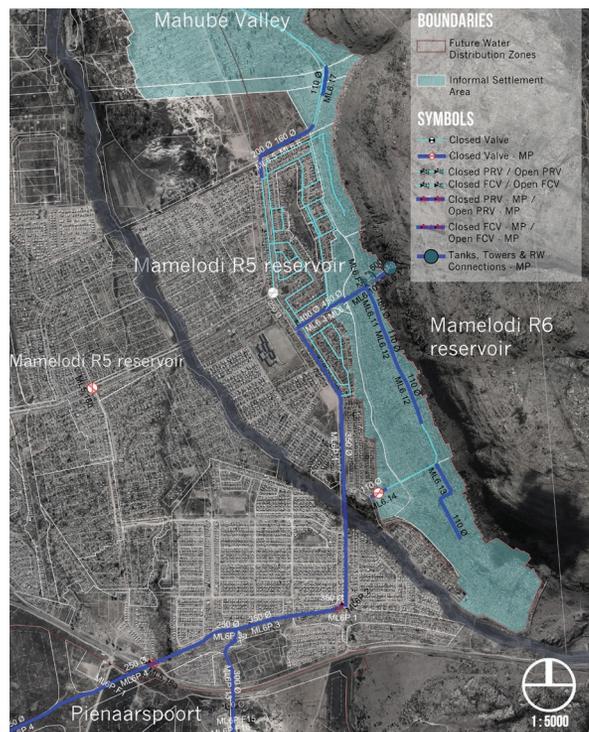


Figure 23 Proposed upgrade of water supply lines including Alaska in blue and turquoise (HONS 2015)

attacked (Kriel 2015; Franklin 2015).

The high stone content of the lithosol soil conditions slow erosion, but the majority of the paths headed down the mountain suffer erosion to such an extent that it is difficult and unpleasant to use them. The high stone content also makes digging of the pit-latrines a more laborious exercise. Drainage is poor and during storms many houses become flooded.

The steep slope that the majority of Alaska is settled

on also plays a role in construction costs. Not only are the roads for vehicles to deliver items within the settlement difficult to create, the individual plots have to be levelled first at a cost of R1200 by local contractors before the building material (locally prefabricated walls and roofs, available at R1200 for a single and R2400 for a larger galvanised corrugated steel sheeting clad pallet timber frame) (HONS 2015) can be hauled up a narrow, eroded and rocky path.



Figure 24 Erosion along a path running down the mountain side (Author 2015)



Figure 27 Houses on plinths built on cut & fill sections. Plinths double as seating (Author 2015)



Figure 25 Much less erosion from roads running perpendicular to the mountain's slope (Author 2015)



Figure 26 Abandoned hole dug in preparation for pit latrine exposes rocky nature of soil (Author 2015)

3.4.4 ASPECTS

One can describe Alaska as a tight-knit, proud and aspirational community that is content with their living place but not their situation. Most are third generation removed from their rural homesteads and do not relate strongly to traditional values and rural customs, yet familial bonds and expectations still play a strong role (Kriel 2015). A typical migratory worker will use their Alaskan plot during the year to be close to work and then be expected back in Limpopo or Mpumalanga at year's end with support for the extended family in the form of money or goods. If the individual is desperate it leads to the theft of anything deemed valuable. In the tight-knit and mob-justice prone community, stealing from your neighbour may land you in hospital or a shallow grave (Franklin 2015), but taking goods from a well-to-do NGO project has less severe repercussions. Viva Village is an NGO that has been operating in Alaska since 2012 and now performs all its services from within a secure plot after retracting them from satellite locations because of constant theft.

Regardless of the hardships the Alaskan's endure, they are none-the-less a proud community and take care to maintain their modest homes. There is much energy spent on both edible and decorative gardening and landscaping their plots. There is emulation of the gardens many Alaskan's are employed to keep in Tshwane's more affluent neighbourhoods. There is even an annual gardening competition held to determine the best garden in Alaska (HONS 2014).

Figure 28 Illustration of pride taken in domestic environment and aspirations in Alaska (Author 2015)

GARDENS



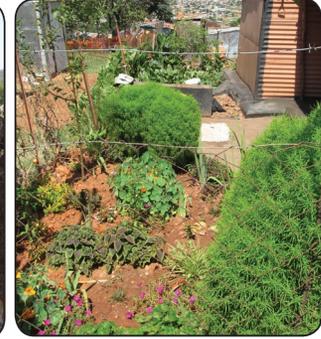
ROCK GABION GARDEN



PLAIN LAWN & TREE



SUBURBIA TYPICAL



SUBURBIA MERIT

THRESHOLDS



VEGETATED FENCE



HEDGE WITH FENCE



GABION & FENCE



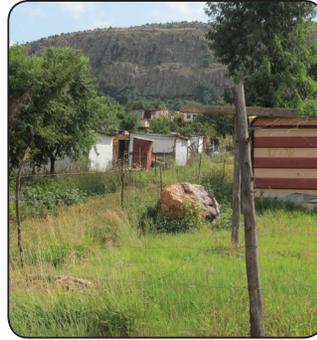
STONE & FENCE



FAILED GARDEN



HARD PACKED
DIRT



WILD VELD &
ROCK



ROCKY
PRODUCTIVE



SUBURBIA
EXEMPLARY



SCULPTED LAWN



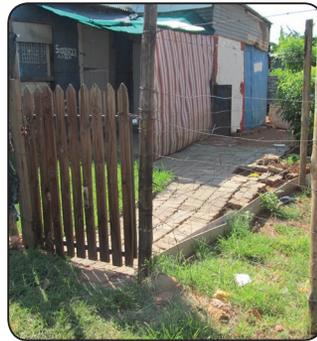
VERNACULAR
MIX



SANDY LAWN



GLASS BOTTLES



FENCE MIX



STANDARD
FENCING



STONE &
MORTAR



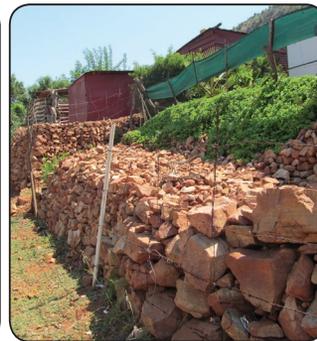
LOCAL TREE
POSTS



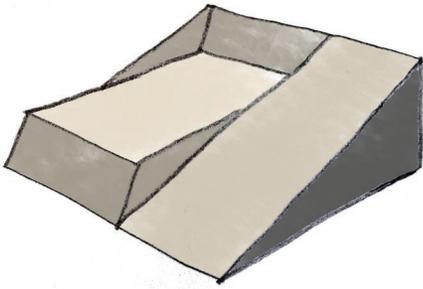
ROCK MIX



MUD PLASTERED
ROCK WALL



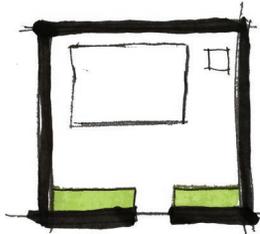
TERRACES



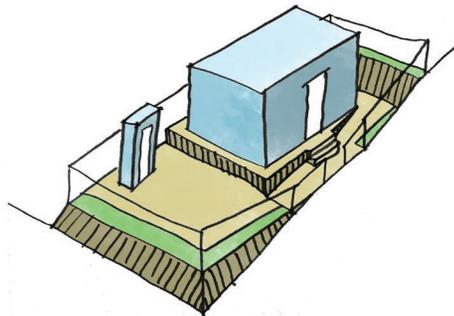
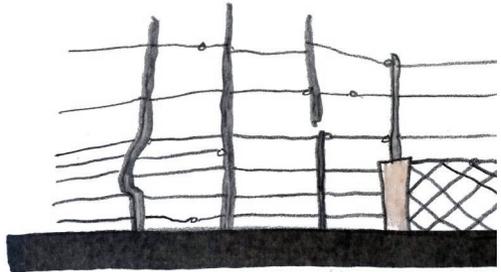
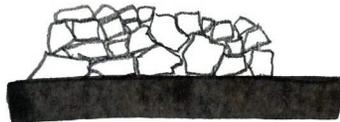
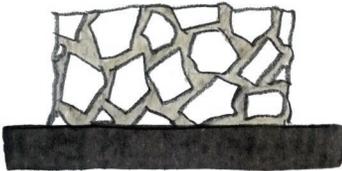
Landscaping of stands in either cut and fill or terracing forms.



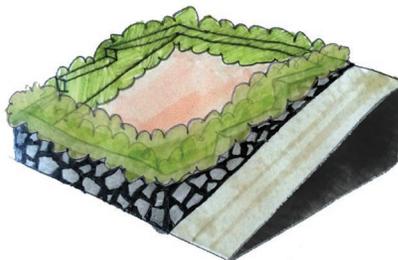
Strong boundaries and public facing decorative garden are indicative of ownership by physical demarcation and personal ability and aspirational attitude of owner.



Dry packed, mortar set stone walls and fences are part of informal South African housing practices. One MUST demarcate boundaries.



Typical Alaskan placemaking



Essence of Alaskan placemaking

The settlement is run by Joe Kgopa and the five zones it is subdivided into are each monitored by an equally charismatic community leader (see Figure 29). They are involved in administrative actions with the municipality and other organisations in Mamelodi East, take care of disputes if any should arise between residents of Alaska and tend to electrical and water connections.

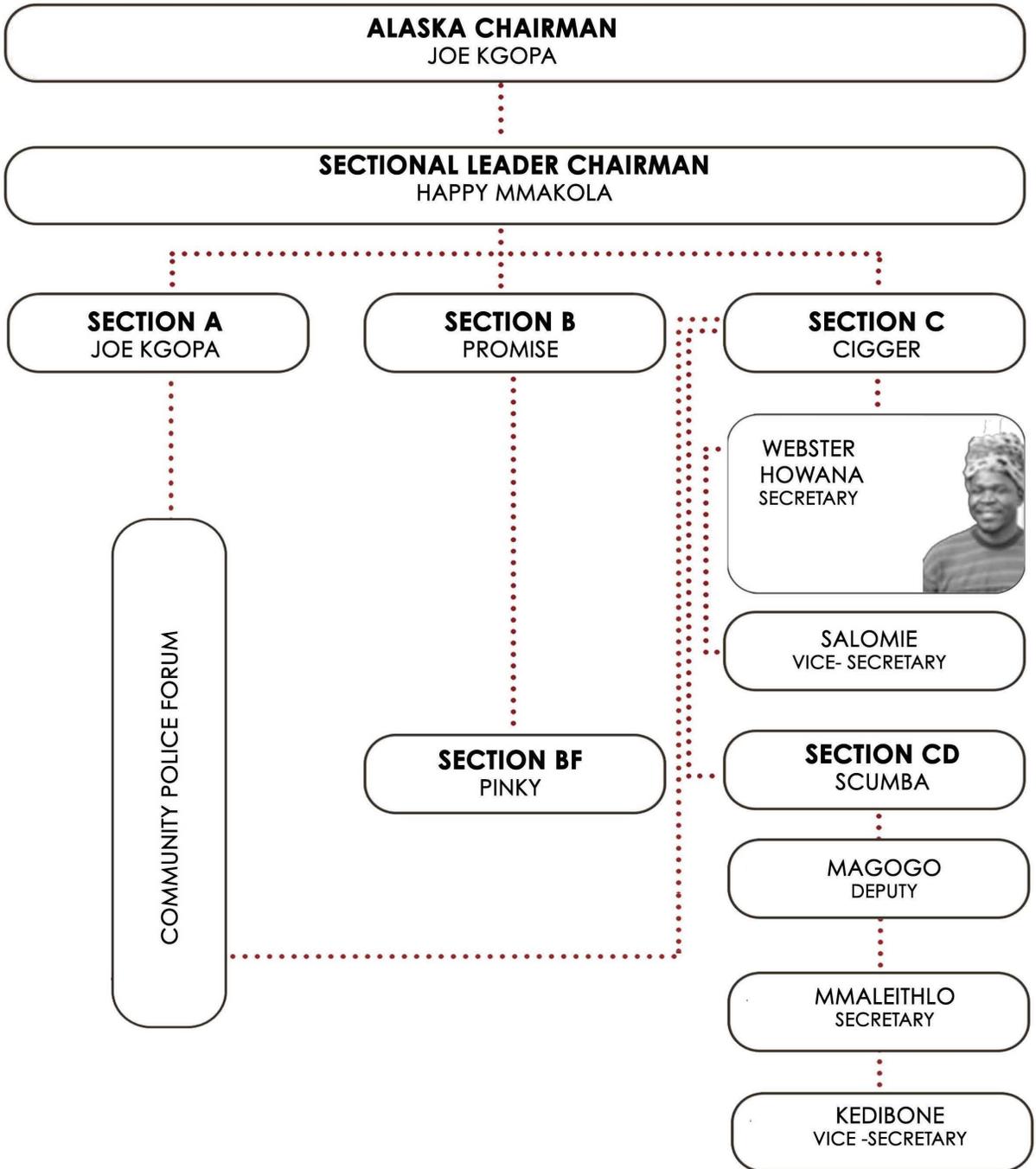


Figure 29 Hierarchy of leadership structure in Alaska (HONS 2015)

3.4.5 WASTE

There is not much pollution in Alaska as the inhabitants do not have abundant money to spend on packaged goods. The waste that is accumulated is either burnt or dumped in the existing RDP storm water channel half-way up the mountain. Sewerage in the form of raw effluent is a possible issue from the shallow dug pit latrines when it rains hard enough to flood them. Two latrine pits are typically dug on a plot and alternated between over a period of approximately six months.

In summary: Alaska is a neat informal settlement busy putting its roots down into a steep mountain slope. It has aspirations which can be channeled into healthier eating decisions, organised leadership to assist some interventions and infrastructural problems such as erosion which need to be addressed for the OET to work optimally.



Figure 30 (above) Waste burn pile with new waste (HONS 2015)

Figure 31 (left) Typical pit latrine (HONS 2015)

Figure 32 (below) Rubbish discarded into existing RDP storm water channel (Author 2015)



3.5 PRODUCTION PRONE PROFESSIONALS

At this point it should be pointed out that the typical response to increasing health through food and landscape architecture is the design of productive urban agriculture as can be attested by the UP Architecture Department's track record: most of the recent dissertations dealing with food and landscape architecture did so through focussing on a productive landscape. This dissertation has found that option wanting as a main driver for its goals.

The Real-time Foods research group (which includes human nutrition and sociologist specialists with community garden experience) and other research articles point out that community food gardens in South Africa are prone to failure, perform poorly (Ruysenaar 2013; Van Averbeke 2007) and that family networks and social grants contribute to a dependence on purchased food (Thornton 2008). The option to implement systems of permaculture are promising but simply put, the benefit to cost ratio of poor working class citizens with little time and money trying to produce their own food is too low. Thus, proposing urban agriculture as the main solution for improving Alaskans' diets is not viable.

As has been noted before, the primary issue lies more with the choices people make when purchasing and preparing food than the availability of it. Even if a community garden was designed and sustainably provided healthy food at a cheaper price than the markets Alaskans frequent, this would not guarantee a change in their eating patterns. In-situ urban agriculture cannot be the primary vehicle for the dissertation's main goal. Giving people more of the same options they do not choose in the first place will not change their diets. One has to change people's eating choices through changing their desire.



Figure 33 Prerequisites for modest returns (Author 2015)



Figure 34 A potential cost to benefit ratio of growing one's own food in Alaska (Author 2015)