ThIS Africa

Giving form to the InFormal

by Nonkululeko Grootboom

Formal Signs...Forms and Signs

ThIS Africa

Giving form to the InFormal

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THANK YOU

- Nico: Your unyielding passion, enthusiasm and support
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ABSTRACT

KEY WORDS:

Claiming space

Defining space

Multifunctional

Space defining elements

Form giving

The thesis entitled “This is Africa giving form to the informal” arose from a concern with the growing levels of poverty and unemployment in South Africa and the recognition that small scale, self-generated economic activity provides an important means of survival for the very poor. It acknowledges the positive contributions that informal street trading makes to the urban environment.

The dissertation draws upon a study of recently initiated projects that aimed to legitimise informal trading, by integrating it in the built environment. It is also driven by a study of the way in which traders organise, claim and define space in the urban environment. This process can be seen as the way in which traders themselves seek legitimacy. Collectively, case studies revealed a number of key elements necessary for the legitimisation of informal trade.

Although the area of the proposed intervention is the Pretoria Station precinct, the study acknowledges that there are universal elements contained in informal trading. These elements establish a set of principles that define the minimal intervention necessary in order to allow opportunities for trade to as many people as possible whilst giving the traders themselves the maximum possible room to manoeuvre. In essence, the approach does not argue for the formalisation or ‘neatening’ of informal activity, but aims to give form to activities frequently regarded as illegal, and to provide street market spaces that can function as essential forms of urban infrastructure (Dewar 1990:xi).

ABSTRAK

SLEUTELWOORDE:

Toe-eiening van ruimte

Definiering van ruimte

Meerdoeligheid

Elemente wat ruimte definieer

Vormgewing

Hierdie skripsie getiteld “This is Africa giving form to the informal” het ontstaan uit ‘n besorgdheid oor die groeiende vlakke van armoede en werkloosheid in Suid-Afrika, en die besef dat kleinskaalse, self-ontwikkelde ekonomiese werksaamhede ‘n belangrike manier van oorlewing vir die erg armes is. Dit erken die positiewe bydraes wat informele straathandel tot die stadsomgewing maak.

Die skripsie word ontleen aan ‘n studie van onlangse projekte wat daarop gemik was om informele handel wettig te verklaar. Dit word ook aangedryf deur ‘n studie van die manier waarop handelaars op stedelike ruimtes aanspraak maak, en hierdie ruimtes organiseer en definieer. Hierdie proses kan gesien word as die wyse waarop handelaars legitimiteit nastreef. Gesamentlik het hierdie gevallestudies ‘n aantal sleutelelemente uitgelig wat nodig is vir die legitimisering van informele handel.

Hoewel die ligging van die voorgestelde ingryping die Pretoria Stasie-gebied is, erken die studie dat daar universele elemente aan informele handel gekoppel kan word. Hierdie elemente bring ‘n reeks beginsels tot stand wat die minimum ingryping bepaal wat nodig sou wees om handelsgeleenthede aan die meeste mense moontlik te verskaf, terwyl die handelaars self so veel as moontlik beweegruimte gebied word. In wese bepleit die benadering nie die formalisering of ‘netjies maak’ van informele werksaamhede nie, maar het dit ten doel om vorm te gee aan aktiwiteite wat dikwels as onwettig beskou word, en om straatmarkruimtes te bied wat as noodsaaklike vorme van die stedelike infrastruktuur kan funksioneer.

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DESIGN PHILOSOPHY

"Design is the effort to make product in such a way that they are useful to people. It is more rational than irrational, optimistic and projected toward the future rather than redesigned, cynical and indifferent. Design means being steadfast and progressive rather than escaping and giving up..."(Krippendorff & Butter 2003:210)

DESIGN

In their essay, "Product Semantics: Exploring the Symbolic Qualities of Form," Klaus Krippendorff and Reinhart Butter (2003:209-210), describe design as being, in its broadest sense, the act of consciously developing forms to serve human needs. In order to develop these forms, designers need to become critics of civilisation, technology and society; and then transpose these insights into three-dimensional objects.

INTERIOR ARCHITECTURE

The fundamental task of interior architects is to design forms to support people, their activities and aspirations, derived from an exploration of the relationship between space, user and object in order to create legible environments and evoke feeling. According to Roberto J. Rengel (2007:9) this is done by cultivating an appreciation and understanding of the types of rituals and events associated with the project. By listening, observing, and most of all, exposing oneself to the realities of those who use the spaces, designers acquire the insights and sensibilities necessary to inform their designs. In this vein, individual activities become subplots of the entire environmental experience. The experiences of people approaching, arriving, moving, interacting and performing tasks become events with important design implications. Rituals that are performed routinely, as well as those performed for specific occasions and vary from time to time - their effect on the surroundings - all affect the total experience that people have in space.

HOW IS THIS PROJECT INTERIOR ARCHITECTURE?

This project has been developed from a study of how individuals utilise space and objects and their connection with surrounding forms. However in this context, the space which they occupy is not defined by solid enclosure on all four sides. The site is a streetscape, a context in which space and subspaces are defined by elements that are fixed as well as those that are manipulated through use. Streetscape design has been the design domain of architects, landscape architects and urban designers, in many instances it has been treated and viewed as the empty space leftover from buildings. However these spaces are never truly empty and always embody meaning for the individuals that move through them.

The most strongly defined boundaries along the streetscape are those defined by architectural forms. According to Habraken (1998:132) all forms, both natural and built, offer potential boundaries and inhabitants use architecture to define territorial boundaries. Inhabitants also use lower level objects in relation to architectural form in order to increase their territorial claim. For instance shopkeepers often claim pavement space outside their shops by the placement of wares, thus increasing their territorial boundary. Musicians often stand against a pillar placing a hat in front of them; passersby understand and respect the use of a token to stake a territorial claim, and enter this zone now and then to toss a coin. This territory may only be claimed for a few hours, but whilst it lasts, it creates an increase in territorial depth in the environment (Habraken 1998:160).

"Territory interprets architecture, but by no means in strict obeisance to it." (Habraken 1998:132)

In its most basic form, territory however temporary or transparent, is claimed by the human body. Being in public space involves an agreement to partake in a game of territorial configurations. Territories shift as people use objects, sit on benches, stand on the pavement or even enter sub spaces as is done when using a public telephone, where a unit of space is claimed by the telephone booth. Whilst in public space, individuals make momentary spatial claims that follow the flow of use within the given context (Habraken 1998:160).

Traditionally interior architecture is practiced within an architectural envelope and is tasked with articulating the territory of a client. Using surfaces, walls and plains the interior architect indicates to the user how the space may best be used, which zones are private and which are public and which surfaces impart information. After a few years, the environment may be altered to suit the needs of a different client. Thus, even in the formal realm there are temporary territorial claims. Using their skills, the interior architect is tasked with assisting a client to claim their territory and make them identifiable and unique in the environment using devices such as branding. Essentially, even in the formal realm, the interior architect aids in claiming space and making it useful.

In the streetscape the realm of informal traders needs to be articulated. A reading and interpretation of the common traits of street traders - their space defining elements as well as their interaction with the spatial environment gave rise to the belief that traders and street users alike seek formal signs – or forms and signs – that they can relate to in the urban environment. Informal traders seek these signs in order to enforce a sense of legitimacy (Habraken 1998:227).

> *"In contemporary society, all citizens seek to settle in environments in which they "belong" and this is done by reading formal signs within a fabric in order to determine to what we may potentially relate (Habraken 1998:227).*

Therefore this study aims to create a system to which traders and street users alike can relate. A study of local urban contexts as well as recently initiated projects that aimed to integrate traders in urban environment revealed a number of key elements necessary for legitimisation of informal trade (refer to page 88). These systems, patterns and types are not recipes to be repeated but simply provide a framework of recognisable forms within which variations may be made. They are forms that may be appropriated and improvised upon to make new instances. According to Habraken (1998:230), variations within a theme enable individuals to define themselves within the context of a given group or society. The theme connects the user and society within a given context. According to him, in each variation, "we conform in order to create'.

Thus, this thesis aims to be the beginings of creating a system that legitimises informal traders, allows them to claim space in a legible environment, whilst allowing them room to manoeuvre within the system.

"Human beings seek signs of formal coherence among grouped artefacts, overlaying comprehensible structure on seemingly random form." (Habraken 1998:227)

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Figure 01. Apple perspective

chapter 1

Background
Real world problem
Research goal
Site Abstract
Aims and objectives

"Streets and their layout reflect the societies that have created them." *Moudon 1987:13*

BACKGROUND

More than ten years ago, when South Africa held its first democratic elections in 1994 and the adopted of a new constitution, it seemed as if new urban era was to be ushered in.

A legal framework was formulated in the Developmental Facilitation Act (Act 67 of 1995), which outlined decision-making related to land. In essence it was a collection of principles that sought to reverse the spatial characteristics of Apartheid cities (Dewar 2004:39). More than ten years later, little has changed and the dominant spatial features of South African cities continue to be characterised by fragmentation and distorted spatial and social structures (Froise 2006:4). Spaces between buildings continue to act as space-bridges as opposed to space integrators, giving preference to the automobile in typical modernist fashion. Streets were and still are seen as high speed routes serving only to get people from one neighbourhood to another as quickly as possible (Dewar 2004:40). As such, streetscapes have become spaces to merely move through and fail to act as public spaces nor do they contribute to social interaction or community formation.

Modernist planning techniques were compounded by Apartheid principles, which designated urban spaces as exclusively white areas aimed at dictating and restricting the pattern of black settlement in urban environments (Mabin & Smit 1997:198). When black users were present they were seen as temporary inhabitants of urban areas. Today, this has resulted in an inner city that is dysfunctional as a peoples' place (Froise 2006:4).

In the early nineties national laws restricting black economic activities in the inner city were relaxed and South African inner cities saw an influx of black users, formerly banned from these areas, in search of economic opportunities. Some of these new users, failing to find work, began to trade informally where business was favourable and pavement space available (Dobson, Skinner & Nicholson 2009:45). Street trading and associated practices outside the formal realm are still not recognised as urban in a conventional sense and are seen as counter progressive and contrary to the Modernist ideal of what the city should be i.e. a series of narrowly defined optimal solutions to problems of distributing people, resources and traffic. This has manifested as a series of sterile streets and extensive parks, and a deterioration of urban landscapes largely due to poor urban management, as well as high levels of crime both real and perceived (Wood 2008:60).

Today, South African inner cities are largely characterised by dual environments - formal and informal realms that struggle for equal legitimacy. The informal realm includes thousands who are struggling to establish themselves economically. This realm however is not only about livelihoods; it plays an important role in city making adding to the dynamic character of the city (Dobson & Skinner 2009:85). By celebrating, accommodating and legitimising emergent urban practices outside the formal realm, it is envisaged that one could achieve a democratic street which is described by Francis as:

> *…one that reflects the history as well as the social and economic diversity of the populace in the city – reflecting justice and economic health. It emphasises the access and needs of many people, provides opportunities for discovery and challenge, and actively encourages user manipulation, appropriation and transformation (Francis 1987:28).*

Figure 02. Traders, pedestrians and taxis


MARULHA PIESANGS

Nowadays, we do not expect streets to offer us much more than a place to sit as we wait, a rubbish bin and a means of getting to our destination (Gaventha 2006:49). The concept of democratic streets recognises streets as playing larger social and economic roles in towns and cities, used by different people for a variety of activities. This is contrary to current urban practice that sees streets designed primarily for one group or for a particular function such as walking or driving (Francis 1987:29).

Streets are the most frequently used public spaces in our urban environment. It is necessary to review streets as a site that connects a variety of activities in time as well as in space.

> *These passages, routes and simple (sidewalks) are where most urban dwellers interact with others: meeting and greeting, flirting, waiting for buses, queuing and chatting on the phone (Gaventha 2006:49).*

The quality of an environment can affect our behaviour and responses; moreover, a good quality environment gives a feeling that the local authority cares.

REAL WORLD PROBLEM

Many architects grapple with the optimal design of formal retail space, yet informal retail – street and market trade – has received far less attention (Dobson & Skinner 2009:82).

A look at South Africa's urban environments confirms that:

> …despite advances in modern retailing, millions of people still make their living selling goods on the streets. These men and women are an integral part of the urban distribution system. They sell goods in appropriate quantities and at convenient times of day for commuters… There are however very few cases in South Africa or internationally where street traders have been sensitively integrated into urban design (Dobson & Skinner 2009:82).

To date, South African cities have seen a range of architectural responses that have aimed to acknowledge and legitimise emergent urban activities; these responses range from eradication to inclusion (Dobson & Lees 2008:21). In projects that favour an inclusive approach, there remains an uncertainty of how to intervene effectively as well as how to address the traders that continue to trade on the street pavement.

RESEARCH GOAL

In light of recent local urban renewal projects that aim to accommodate and integrate informal traders into the urban environment by housing them within structures, this study aims to address the gap in the informal trading sector, looking beyond the creation of iconic buildings but at giving form and legitimising the individual who strategically places himself on a high foot traffic route in order to earn a living. This is driven by the perception that built structures and the institutions they represent were probably the source of alienating the traders in the first place. This study addresses stalls from the portable to the fixed on pedestrian paths along the street edge viewing informal trade as a system, composed of multiple subsystems that overlap and connect within a matrix. As such the study will examine how the individual can operate and grow within this system through humanistically conceived interventions that aim to understand the various scales of this activity from the inside out, rather than the outside in. The aim is to exploit existing conditions into a system that evolves and learns from existing site conditions.

"Collective behavior begins to shape the physical environment: people, money, goods, information and other things flow, interact; they create reactions in the skin of the earth and inform the dynamics of the second skin: the city." *Bunschoten, Hoshino & Binet 2001:28*

Figure 03. Trader selling wares on Paul Kruger Street

SITE ABSTRACT

Given that planning action must be shaped by the context in which it occurs, the programme of intervention into informal typologies looks specifically at the Pretoria Station Precinct. Driven by the need to address the changing use of the city environment by society given that new needs require environments to adapt in order to cater for its users and enable the city to function at its highest potential.

The site is the Pretoria Station Precinct, which is the culmination of the Re Kgabisa Tshwane framework (City of Tshwane: Not Dated). The choice of site is a response to City of Tshwane Metropolitan Municipality's (CTMM) vision to make Tshwane a world class African city by creating pleasant working and surrounding environments for government officials working in the inner city. The Re Kgabisa proposal, however, envisages a number of picturesque squares without taking into account that the activities and people 'on the ground' determine the real quality of the urban environment.

In addition, the (CTMM) local council has earmarked the station precinct as an area that will be restricted for informal traders in terms of Section 6A of the Business Act 1991 (Act 71 of 1991) (Mathime, A 2006:1), which suggests that the area will become an exclusive environment that does not represent the populace. This is contrary to what happens naturally at the confluence of different transport modes (in the South African context) – they are a natural market for informal traders and the social dynamics that come with it. Informal trading and transport support one another and simultaneously contribute to infrastructure (Malan 2005:18).

RE KGABISA

TSHWANE OBJECTIVES THAT ARE RELEVANT TO THIS STUDY (CI: NOT DATED).

- ensure that the urban environment is improved, including urban security, public spaces, and accessibility
- Contribute to Inner City renewal and rejuvenation
- Develop the image of Tshwane as an important capital city in Africa
- Contribute to BEE
- Attract private sector investment
- Creating precincts with distinct character

AIMS AND OBJECTIVES

- Humanistic approach to intervention in the urban realm
- Challenge the traditional role of the interior architect - inquiring whether informal retail that usually occurs outdoors falls within the domain of interior architecture?
- What could be gained from understanding the various scales of this activity from the inside out instead of the outside in?
- Critically investigate current urban practices of informal trade, in order to exploit existing conditions into a system that evolves and learns from existing site conditions
- Intervention is driven by a need to effectively manage the activity at the chosen site, orchestrate action and suggest a new typology that stimulates self-organisation
- Address cleanliness, safety and hygiene

RESEARCH PROBLEMS

How can informal retail along with its associated emergent activities be legitimised in the urban realm in order to create a democratic street that reflects the nature of South African society?

a. How can current site dynamics become primary and influential as design generators?
b. How can the informal traders be given a higher profile in the urban environment whilst still reflecting adaptability, diversity and creativity?
c. How can designers provide infrastructure that is adaptable for different traders whilst still giving them a sense of ownership?

Figure 04. Figure ground map of Pretoria Tshwane CBD locating study area

Figure 05. Re Kgabisa vision for the southern portion of the CBD

Figure 06. Re Kgabisa vision for the Museum Park Precinct

DEFINITION OF TERMS

Context – societal needs, environment (author's interpretation derived from the Oxford Concise English dictionary (Fowler & Fowler 1995:288).

Form – n. the shape or arrangement of parts (Fowler & Fowler 1995:531).

Humanistic – n. an outlook or system of thought concerned with human matters promoting human welfare and relating to human action, it is a humane approach (Fowler & Fowler 1995:661).

Informal Sector – economic enterprises at the bottom end of the continuum ranging from very small to large businesses. Currently it is less stable, more oppressed and fragile and sometime less permanent economic activities which are central to this work (Dewar 1995).

Legitimise – a lawful and proper valid force in the urban environment with a role to play in its healthy functioning (author's interpretation derived from the Oxford Concise English dictionary (Fowler & Fowler 1995:777).

Urban Market – physical agglomeration of small traders and producers (Dewar 1990:xi).

RESEARCH METHODS

- Passive observation in order to determine:
  - how products are stored, and displayed
  - patterns of use
  - appropriation of space
- Interviews with professionals and organisations that have worked on projects that involve street traders
- React to informal trading policy and streetscape guidelines
- Review projects that have attempted to integrate informal traders into the urban environment
- Study of international precedents that have similar urban conditions
- Literature review

ASSUMPTIONS

Link framework will be implemented:

- The park and ride scheme on the south-west corner of Bosman and Jacob Mare streets will come to fruition, resulting in higher volume pedestrian traffic.
- The inception of the Gautrain (Gautrain Rapid Rail Link 2007) and BRT (Bus Rapid Transport) station (Appel 2008) will generate greater pedestrian traffic in the precinct throughout the day.

The Gautrain is a high-technology rapid rail network that will run between Johannesburg and Tshwane. It is envisaged that by 2015 there will be 24 trains that will travel in both directions. At this time, with a population of 14,6million, Gauteng will be the 14th largest urban region in the world. The Gautrain will be critical in supporting and enabling the economy of the province to grow (Gautrain Rapid Rail Link 2007).

The BRT, Bus Rapid Transport System is seen as a major upgrade of the transport system that will also aid in reducing congestion on the roads whilst creating a "fast, efficient, safe, affordable and accessible" mode of transport within Gauteng, according to Johannesburg Mayor Amos Masondo (Appel 2008), speaking at the launch of the prototype station in Johannesburg in 2008. It is also envisaged that at its peak, the buses will run for 18 hours a day from 5am to midnight daily. Thus making the BRT system crucial for South Africa's transport system as a whole.

To date, since the beginning of construction of the Gautrain stations and rail system in 2006, many job opportunities have been created. New businesses, shopping malls and residential blocks have been established along Gautrain routes and in proximity to Gautrain stations (Gautrain Rapid Rail Link 2007). It goes without saying that the areas around Gautrain stations will be favourable for large and small businesses alike.

The precincts and areas surrounding transport interchanges should enable business opportunities for both established formalised businesses and small traders alike - representing all members of the population, including those who are usually marginalised and neglected.

DELIMITATIONS

- As much as the study hopes to learn from the existing conditions and find a viable solution it has been noted from case studies conducted - that a project of this nature relies heavily on extensive negotiations and workshops involving various stakeholders, actors and agents. A study of that nature will require resources, funds and time that a one-year study for fulfilment of a MInt(Prof) study will not be able to realise. As such, this study aims to suggest a solution that responds to more than the pragmatics of street traders, but to the qualitative aspects which have not yet been explored in order to give form to informal trade.
- In order to maintain and understand the intrinsic nature of street trade, the study will rely heavily on passive observation in order to determine the needs of traders.

Figure 07. Panoramic view of the Station Precinct

Link is a group framework that addressed the linking of Salvokop, South of the city and the Station Precinct

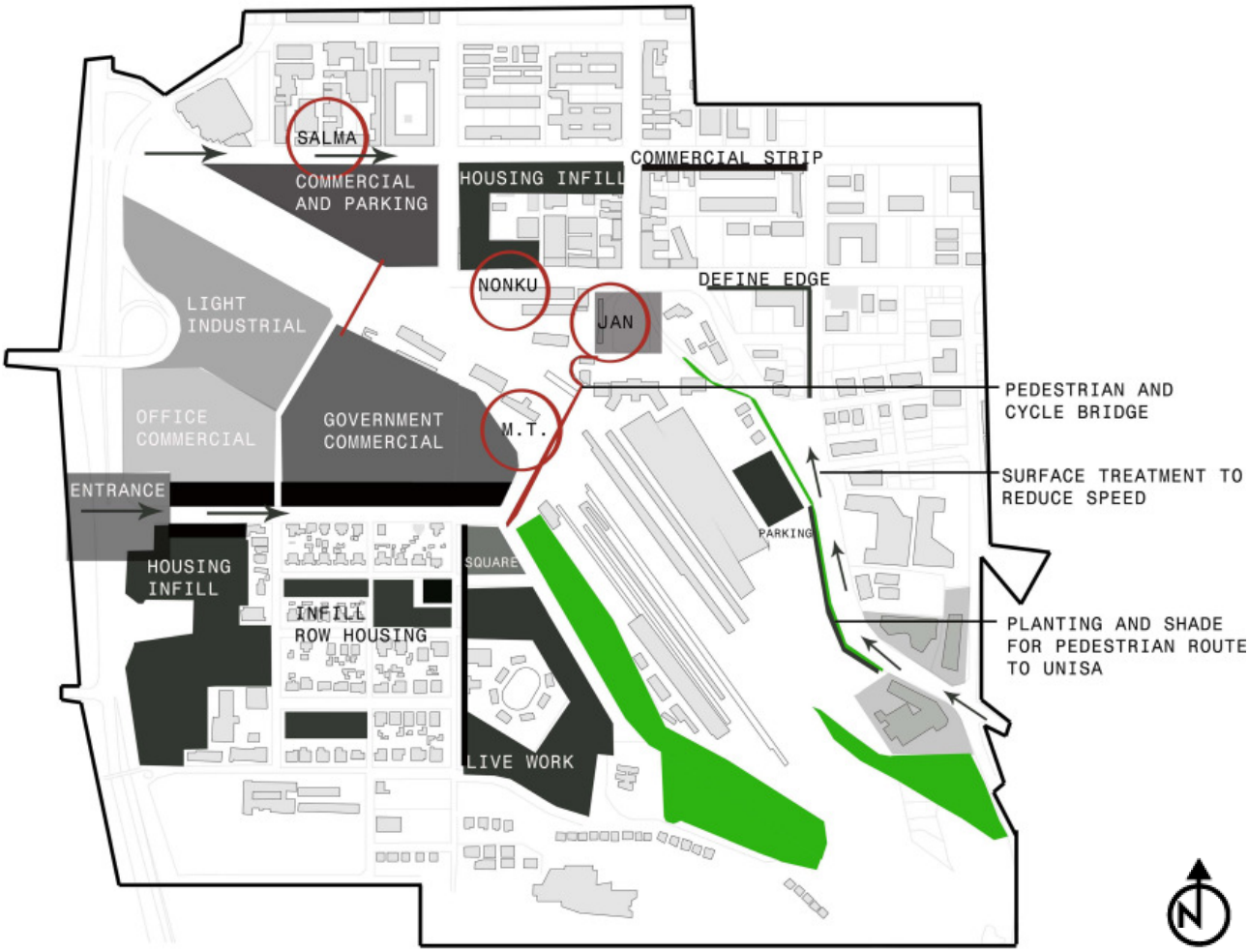

Figure 08. LINK framework proposal


MANDELA & QUEEN
HAIR SALON
SPECIALS

Figure 09. Scheiding Street traders' shed

chapter 2

Introduction
Activities
Pedestrians vs vehicles
Pedestrian Environment
SWOT Analysis
City of Tshwane Metropolitan Municipality
Client Framework

INTRODUCTION

The Station precinct is located between the Herbert Baker building on the south and Jacob Mare Street on the north. It is the southern-most precinct in the CBD with the historical Herbert Baker building being the main feature (figure 12).

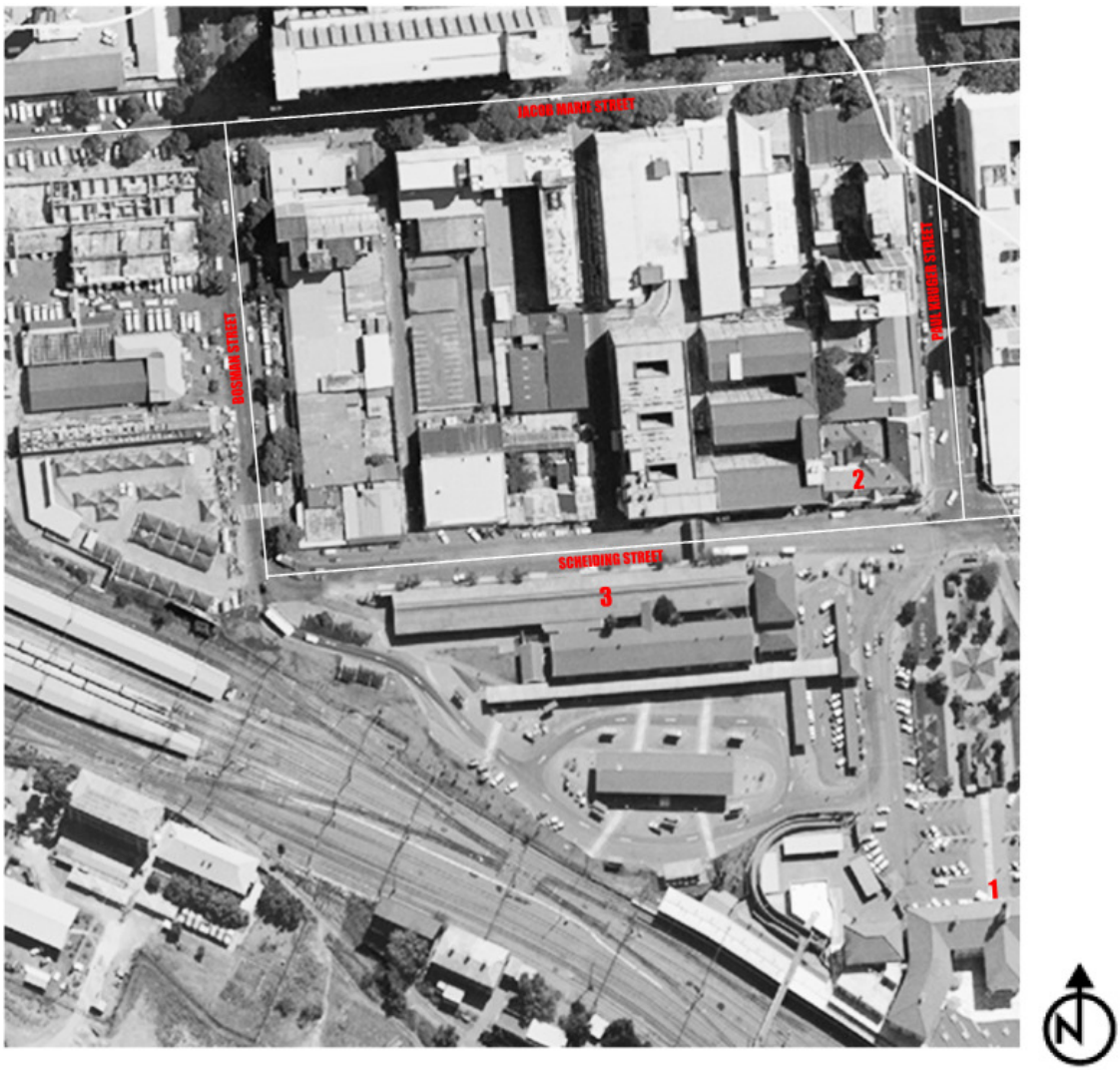

Figure 10. Aerial photogragh of the Station Precinct (N.T.S.)

Figure 11. Pedestrian movement on Paul Kruger Street with informal trading outside shop

Figure 12. Historical Herbert Baker building

Figure 13. Victoria Hotel

Figure 14. Commuters walking towards Bosman Station

Figure 15. Pedestrian environment on Paul Kruger Street

ACTIVITIES

The precinct is an important modal interchange with busses, taxis and trains congregating at the station. This modal interchange generates large pedestrian flows which provide customers for street traders (fig 11, 14, 15). The surrounding streets channel pedestrian traffic and form ideal locations for street traders who locate themselves in direct proximity to potential customers. The precinct is characterised by bustling activity, mixed land uses and informal trade.

PEDESTRIANS VS VEHICLES

The station generates much pedestrian movement but the street is designed for vehicular traffic, resulting in conflict with pedestrians. There is on-street parking on either side of the roads.

PEDESTRIAN ENVIRONMENT

- The pavements are in a bad state of repair (fig 17).
- There are insufficient seating areas and very few trees provide shade.
- There is inadequate street lighting.
- Pedestrians and traders compete for pavement space particularly, along Paul Kruger Street which it only 3,6m wide (fig 11).
- Pavements along Scheiding and Bosman streets are much wider (up to 7,2m wide). Here there is little to no conflict between traders and pedestrians (fig 16).

Figure 16. Pedestrian environment on soutern portion of Bosman Street

Figure 17. Pavement condition

Figure 18. Pedestrian environment on northern portion of Bosman Street

Figure 19. Shop owner displaying wares outside shop

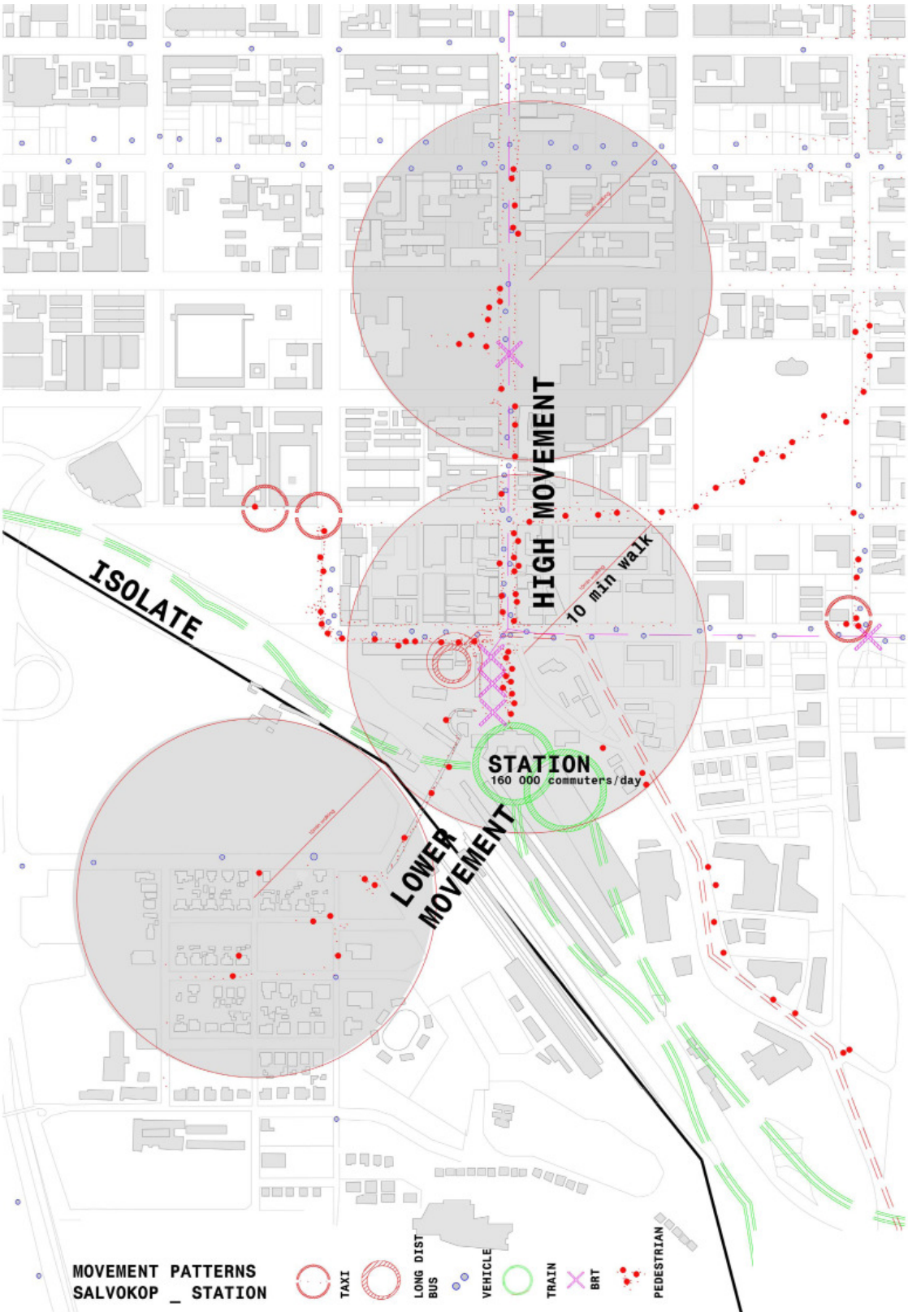

Figure 20. LINK movement patten analysis

SWOT ANALYSIS

The points listed below are those identified by the Group Framework (LINK) that are applicable to this study:

STRENGTHS

- High volume commuter traffic
- Small-scale commercial activities (No anchor shops have a monopoly)
- Modal Interchange
- Multifunctional land use

WEAKNESSES

- Precinct lacks a coherent character
- Not a 24hour area save for the tavern on the corner of Hoop and Scheiding streets
- Lack of public security strategies

OPPORTUNITES

- Parking
- Establish urban identity, character and legibility
- Promote day/night activities on the streets
- Activate small alleys – Hoop and Christina streets
- Improve the pedestrian environment in a way that benefits city, traders and street users alike

THREATS

- No attractions other than transport

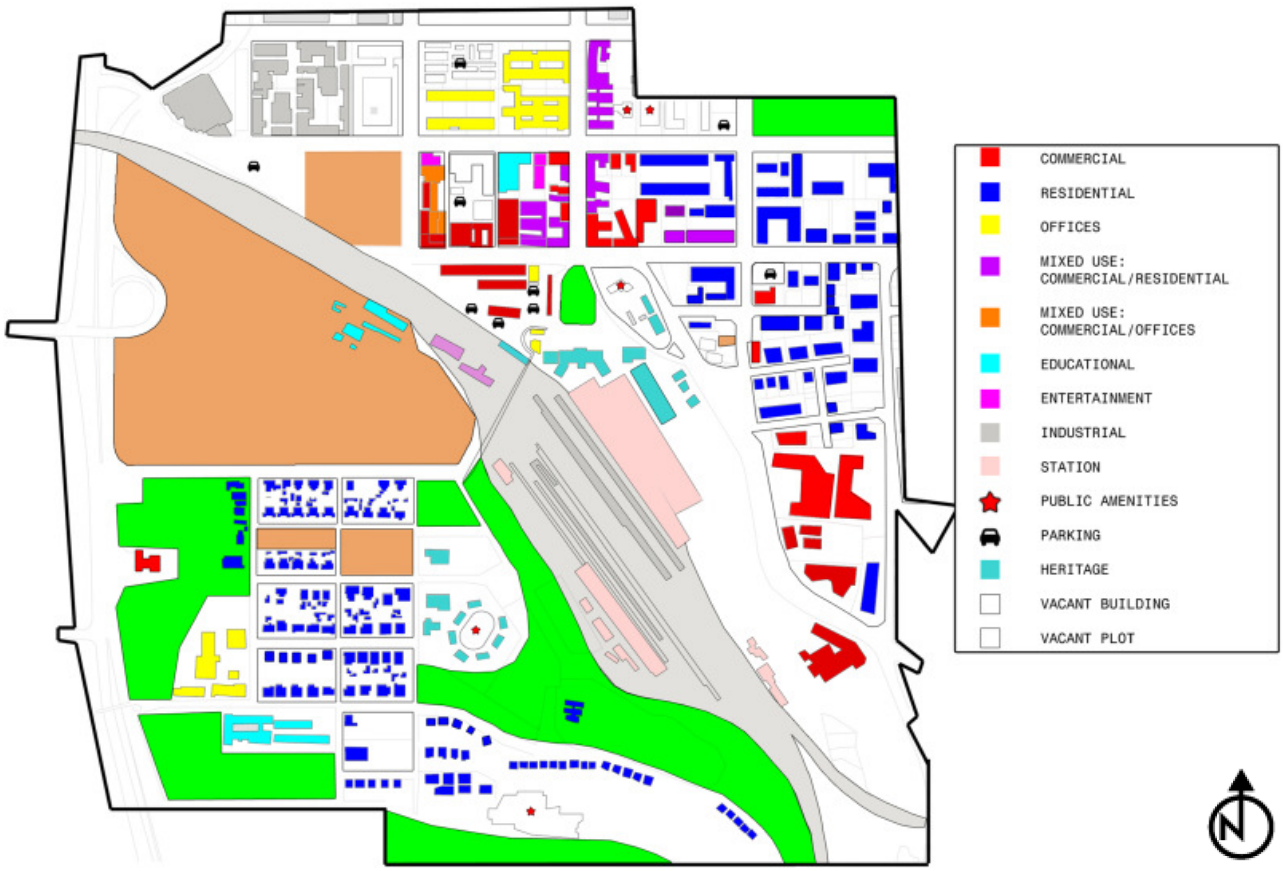

Figure 21. LINK study area activities analysis

SITE DYNAMICS

At the station precinct, the division between formal and informal trade is not always clear-cut. For instance, some shop owners display their goods on the street pavement (fig 22) (University of Pretoria 2000:33). It was also found through interviews of traders in the area, that informal traders had to ask permission from formal shop owners to sell in front of their shops. In some of these instances traders have been incorporated into 'partnerships' with formal shop owners, where the product or service provided by the trader is negotiated to provide a service that supports what is sold in the shop without competing. This demonstrates that there is communication and understanding between people in the public realm, demonstrating a kind of democracy. There is an opportunity for formal and informal realms to co-exist and organise themselves in a democratic street.

Most shop owners however complain about informal traders, mostly because of the unfair advantage they have with regard to the payment of rent and tax and about the degradation of the environment. Although most shop owners complain about the traders, they indicated in a perception survey conducted by students of the University of Pretoria (2000:34) that they would support informal trade in specially designed stalls that enhance environmental appearance. According to shop owners, the poor appearance, of the stalls creates a negative impression of the streets on which these businesses are located, thus deterring potential customers.

Traders at the station precinct reveal that the major problems they are faced with are the lack of facilities, such as water, litter bins and safe storage space (University of Pretoria 2000:34). To date, little to no permanent infrastructure has been provided for the many thousands of street traders in the inner city. As a result, trading takes place using makeshift infrastructure which is generally provided by the seller. Some components made by a local carpenter and others are bought cheaply from individuals who steal crates and trolleys from local factories and shops. This arrangement is precarious, always with the risk that these elements will be repossessed. The large companies to whom these crates belong, collect them every one to three months.

Much use is also made of the existing environment: in the absence of the commonly used marquee tent sourced from local wholesalers such as The Job Shop on DuToit Street in the Central Business District (CBD) and the Army Shop on Mitchell Street in Pretoria West, trees and roof overhangs provide shelter, the tarred road a selling surface, and for some street traders the selling surface doubles as a bed at night. Kiosks are commonly 2,5 by 3 metres in size and approximately 3 to 6 metres apart.

One reason for the lack of more permanent street-market infrastructure has to do with the insecurity of the traders themselves. For the most part traders are viewed as a negative and temporary phenomenon and 'illegal' in the eyes of the local authority. As a result they are subject to frequent harassment by the local police who occasionally act as hawker patrol. Traders who have to disappear when hawker patrol approaches - spend little to no time or money providing stall infrastructure (Dewar 1990:86). As a result they make little effort to keep their areas clean (Dewar 1990:94).

Intersite property management services (Intersite), the major landowner at the station precinct (University of Pretoria 2000:34), recognizes that informal traders actually make a positive contribution to the area in terms of safety. According to this organisation, the crime rate in the precinct is low because of the passive surveillance provided by informal traders.

Figure 22. Early morning environment on Bosman Street

Figure 23. Goods in Proes Street informal traders' storage facility

Figure 24. Crates stacked on trolley

"There are an estimated 30 thousand informal traders in the City of Tshwane. The challenge is to effectively manage, promote and control this growing sector." *Mathime 2006:1*

CITY OF TSHWANE METROPOLITAN MUNICIPALITY: CLIENT VIEWS & CURRENT PERCEPTIONS OF INFORMAL TRADING

In the beginning of 2004 the City of Tshwane Metropolitan Municipality drafted a document that aimed to address informal trading and taxis in the inner-city. This plan was drafted by the Department of Economic Development and divided into short, medium and long-term interventions.

The short-term plan focused on assessing current trading facilities and identifying areas that could be set aside specifically for trading. This process was deemed to have been positive according to the portfolio committee for economic development, airports, tourism/ marketing and communication held on 10 April 2006, led by A. Mathime, and approved by the mayoral committee on 12 April 2006 (Mathime 2006:1).

The medium and long-term plans involved conducting research aimed at understanding the nature and extent of informal trading in the inner city in order to develop a comprehensive set of bylaws. These have yet to be realised.

Presently, the station precinct has been earmarked as an area to be restricted for informal traders. This will most likely be realised with the inception of the BRT and Gautrain stations, which will see the area gaining a higher profile (Mathime 2006:10). Although the municipality recognises the needs of the informal traders, it does not yet have a strategy to integrate the traders into the urban environment in a way that enhances and promotes the image of the city of Tshwane as a world class capital city. The outcome of the conference does, however, acknowledge that the areas around transport interchanges are a natural market for informal traders, stating that, "Any restriction placed on these areas must first be communicated with divisions such as city planning and sections such as streetscape design." in order to find amicable solutions in terms of the spatial implications of any design interventions (Mathime 2006:10).

The City of Tshwane Metropolitan Municipality (CTMM) is open to suggestions that address the following (Mathime 2006:10):

- design of stalls
- suggestion of the most desirable precincts for certain types of traders
- suggestions as to the image, appearance and focus of individual market areas
- the design of stalls and markets to contribute to the image of a capital city
- storage and delivery facilities.

This creates an opportunity for the creative integration and accommodation of informal traders in a way that improves the image of the capital city and enables it to become an attraction for both tourists and daily commuters alike – legitimising the traders and integrating them into the urban environment can make the street more vibrant and lively (University of Pretoria 2000:34).

In addition, if this area does become restricted for informal traders, it cannot be guaranteed that informal traders will not continue to attempt to ply their wares to potential customers (University of Pretoria 2000:34).

In a paper resulting from the Education for an Open Architecture Conference held in October 20-22, 2008 Amira Osman and Raymund Königk cited 'informality' as an integral force in the socio/economic scene of South Africa that it is likely to remain for years to come (Osman & Königk 2008:192).

As South Africa becomes more developed and strives towards first world status, every attempt is being made for economic growth. The reality, however, is that these plans and policies do not always 'trickle down' to lower income groups - informality appears to be more efficient in providing for needs of the poor (Osman & Königk 2008:193). Informality is the last remnant of pre-capitalist economies and is critically positioned in having a significant role to play both in providing employment and contributing to a reorientation of the economy (Dewar 1990:1-2).

Thus, the 'informal' should be recognised as a legitimate force. To ignore the presence of informal traders in development plans does not guarantee an eradication of poverty and amounts only to a neglect of the skills and knowledge that the poor may contribute to development (Osman & Königk 2008:193).

The investigation contained in this dissertation is therefore not bound by the definition of informality, emergence, informal trading and street trading being illegal activities that need to be hidden away or eradicated, but is rather driven by a need to effectively manage the activity at the chosen site, orchestrate action and suggest a typology that stimulates self-organisation by giving form to this dynamic activity

INFORMAL TRADE

According to Dewar (1990:85), the number of street traders in any city can be regarded as a product of three factors:

1. un- and underemployment as well as poverty force people to attempt to survive through informal activities
2. the extent to which the urban system creates trading opportunities to which they can respond - such as high volume pedestrian traffic and proximity to transport interchanges.
3. the effectiveness of controls imposed by the authorities in relation to the above-mentioned opportunities

"Professional architects and housing practitioners need to position themselves in terms of various interpretations of development – this is critical in order to guarantee their effectiveness." Osman & Königk 2008:193

Figure 25. dti logo

CLIENT FRAMEWORK

The City of Tshwane Metropolitan Municipality aims to revitalise the city of Tshwane with improved infrastructure and urban management as core to the programme that will enhance the city's image and reputation as a leading African capital city (City of Tshwane n.d.). Continued government investment in the inner city in accordance with the Re Kgabisa vision encourages the participation of small and medium enterprises (SMMEs) in this programme.

Figure 26. seda logo

SEDA

Department of Trade and Industry – project partners and investors

SEDA supports the development of small businesses and entrepreneurship in South Africa. The agency aims to initiate a national entrepreneurship drive and expand education and training for small business owners. dti aims to establish a dedicated network of SMME (Small and Medium Enterprise) finance that will be supported by financial incentive schemes for the small enterprise sector (Department of Trade and Industry 2005:39).

Figure 27. Khula logo

KHULA ENTERPRISE FINANCE LTD

Established 1996, as an independent agency under the auspices of the Department of Trade and Industry (dti).

This organisation's primary aim is to bridge the 'funding gap' in the SMME market not addressed by commercial financial institutions. It is a major force in the development of the SMME sector - a status it has achieved through its ability to adapt to the ever-changing challenges presented by the SMME sector.

The latest strategy proposed by Khula in association with the dti proposes a retail partnering strategy. This could see wholesalers partnering with informal trading precincts to deliver goods fast and efficiently as well as discounted costs on products. The dti and the Small Enterprise Agencies Forum will closely and continuously monitor the adequacy of service provision in specific areas - in this case the station precinct - in order to ensure that measures are taken to close any identified gaps (The Department of Trade and Industry 2005:39).

TECHNOLOGY BUSINESS CENTRES

The 1996 The White Paper on Science and Technology identified the urgent need to raise the overall level of technical competence of the South African SMME sector. The Small Business Development Act (1996) singled out the lack of access to technologies and related skills as being a key constraint to SMME survival and growth.

According to the Integrated Strategy on the Promotion of Entrepreneurship and Small Enterprises one of the key requirements to ensure the survival expansion and growth of the small and informal business sector is to increase the number of businesses that survive and progress to growth and expansion. It is thought that this can contribute positively to higher levels of job creation and economic growth (Department of Trade and Industry 2005:36).

CORPORATE SECTOR

The corporate sector, as a whole, individually and/or in conjunction with the above mentioned organizations, can play a much larger role in promoting entrepreneurship and small business. It is the view of the Department of Trade and Industry that through sponsoring enterprise education, financial-literacy programmes as well as running in-house business support and induction programmes, traders will be able to move through the informal trading realm with the option of one day becoming formal business owners. Whilst some major corporations already have programmes in place to foster entrepreneurship and small business, greater effort should be made to encourage increased corporate-sector participation, particularly in the areas of promoting entrepreneurship, business start-ups, procurement, development and an implementation of comprehensive enterprise-development programmes (Department of Trade and Industry 2005:33).

Currently, there are programmes at the fresh produce market in Marabastad north of the CBD (where most traders source their stock) that aim to teach traders how to manage their businesses and, in particular, how to manage fruit and vegetable trade businesses in accordance with the health and safety act

Figure 28. Family shopping in Warwick Junction

chapter 3

Theoretical discourse
Introduction
Interiority of the city – Forms and spaces
Aesthetics and Atmosphere
A Space with its own rhythms
Interdependence a people a place of integration
Connection with Products – the act of exchange
Giving form
Collage and Democratic Pluralism
Conclusion

THEORETICAL DISCOURSE

"A city should express the actions of individuals and collectives...it is a vessel for our actions and desires..."
Bunschoten et al 2001:24

INTRODUCTION

Cities do not only develop based on plans, but are further given form through the continual adjustment and adaptation of the physical environment by individuals and collectives in order to accommodate real city functions. Consequently, the city is an ever-evolving organism which is formed by use over decades. The city is not a goal in itself; it is a multipurpose shifting organism. Its spaces as well as the forms contained therein are tools formed by use and act as vessels for the urban dwellers' actions and desires. The resultant emergent forms and systems have become the physical encounters of individuals in the city (Bunschoten *et al* 2001:24; Gehl 1987:43).

Chora, an urban and architectural research laboratory, highlight that there should be a new way of looking at and practicing architecture in a way that acknowledges emergent systems. As such, they surmise that to build in cities is to manage change, orchestrate action, design programmes and suggest form whilst stimulating self-organisation (Bunschoten *et al* 2001:25). In their view, human actions should inform the generation of architectural form, and become primary and influential as design generators in order to ensure historical and cultural continuity (Kronenburg 1998:7).

INTERIORITY OF THE CITY - FORMS AND SPACES

According to Gehl (1987:131) "The battle for high quality in cities must be won at the very small scale." The design of individual spaces/segments as well as details, down to the smallest component, are factors that determine the qualities of the urban environment, which, when detailed, properly stand a good chance of being functional and popular (Gehl 1987:131-132). This detailing must be derived from the needs of the individual user (Gehl 1987:85). Public spaces must be attractive to walk, stand and sit in, and if these basic needs are accommodated, a broad spectrum of other activities will also have a basis for good development (Gehl 1987:133).

The actions and activities of the informal street traders as well as pedestrians reveal that there is a particular way in which individuals relate to and make the urban environment useful in order for them to dwell. Reinforcing what Heidegger put forward, that in fact, when one truly dwells, the whole world can become part of our 'inside space', Heidegger also states that, after shelter, architecture needs to identify place, belonging and ownership as well as say something about the individual to whom it belongs (Kronenburg 1998:7).

AESTHETICS AND ATMOSPHERE

An integral part of the experience of the city is the tactile experience of urban spaces. According to Buie (1996:28), the aesthetic nature of the trading environment and objects therein is not actually about the surface appearance of things, but about how the true nature of an undertaking, or an intention is embodied and expressed in form. Informal trading environments respond to the direct intuitive way that we understand what something means and what it is. The market environment therefore expresses in form life's vitality and the necessity of transaction, economic and social for its sustenance.

A SPACE WITH ITS OWN RHYTHMS

'Urban space' and 'real architecture' are always depicted and shaped by inhabitable volumes and their disposition. Historical paradigms have often based their formation of space on the Vitruvian concept of *firmitas* - that which is hard permanent and static (Findlay 2006:18).

The street market environment is a space that is never static but in a state of constant transition, responding to the needs of traders and adapting to the ebb and flow of pedestrian traffic – the continual consumption of merchandise and restocking of stalls and displays. As the pedestrian and trader engage with this space, he or she enters its movement cycle. Walking along the street pavement, spaces fold around the user. Boundaries blur and shift as mobile traders walk about plying their wares whilst other traders establish a selling point for a specific time of day assembling and disassembling devices that aid in claiming a unit of space. Display units and surfaces are restocked and adjusted in response to their inhabitation. 'Walls', 'roofs' and supports are adjusted and physical space is a result (Habraken 1998:58).

The space is dynamic, interactive and flexible with elements that are event-based and others that are process-based. There is a dialogue between the traders and the pedestrians as selling space at once becomes social space. Thus the boundaries between personal spaces are soft-acting like veils imbued with movement, acting and reacting in response to inhabitation (Garcia 2006:18). The street market is a space with its own rhythms and should therefore have the ability to respond to the needs of its users.

According to Buie (1996:25), informal street markets are "first and foremost places of personal exchange. After their first function as a place for the exchange of goods, they also act as places of gathering, in which virtually all aspects of life are at play, they become centres of social life where family and friends meet for socialising - disputes are created and settled, commodities, news, information and gossip are exchanged (Buie 1996:27). Trade in the market environment is about much more than the goods transacted, there is a personal exchange that according to Buie (1996:26), is only a step or two removed from gift exchange and the reciprocity of barter.

Figure: UN/Built store
Project: Un/Built store IDEN
Designer: Hiroi Ariyama and Megumi Mastubara
Sales space delimited by shoe boxes that disappear gradually as sales proceed and boxes are carried away by customers (Marchetti & Quinz 2009:30)

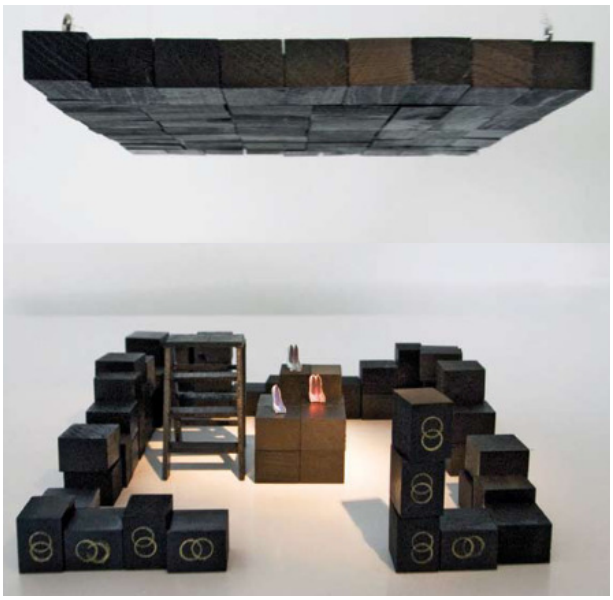

Figure 29. Built UN/Built store

INTERDEPENDENCE AS PEOPLE - A PLACE OF INTEGRATION

Street markets vividly express our genuine interdependence as city dwellers. This interdependence is translated aesthetically into physical experiences such as spaces on a human scale that create intimacy, contact, interaction and responsiveness; spaces that express and create a sense of place, gathering, excitement and possibility. Spaces where various activities and categories of people are permitted to function together side by side, able to stimulate and inspire one another (Gehl 1987:103).

Figure 30. Sreet market in Venice, Italy

"...in Venice the pedestrian system still functions as the city's primary traffic network. Here life and traffic exist side by side in the same space, which functions simultaneously as a space for outdoor stays and a connecting link. In this context traffic presents no security problems, no exhaust fumes, noise, and dirt, and therefore it has never been necessary to separate work, rest, meals, play, entertainment, and transit." Gehl 1987:111

CONNECTION WITH PRODUCTS – THE ACT OF EXCHANGE

In contrast with supermarkets and department stores, sellers in street markets, are often closely connected to the products and goods they sell. Often they have grown or made them themselves or they know the producer. At times they have personally spent time selecting each and every product that is to be sold.

"Colourful, tactile, fragrant produce and wares, organised with care and abundantly displayed, create a wide range of sensory pleasures and heighten the satisfaction of making a transaction. The economic exchange is coupled with a sensual one as well." *Buie 1996:26*

Figure 31. Money exchange

"...in marketplaces...exchange is an art and a dance, and both parties are respectful of each other's intelligence, wile and stamina. There is often an artistry and ritual to the measuring of goods for purchase, such that the buyer will feel that he or she is receiving ampleness that is in fact not there... measuring goods and spill out over the top, there are generous sweeping gestures made of the topping off of the package with something additional not paid for. All this is part of the play and the dance of exchange. And sometimes with more expensive merchandise, showing what's for sale can also become an extraordinary ritual, with the customer seated on little stools, served tea or soft drinks, and regaled with a display of finely woven saris, or every possible black flowered cotton print currently available." *Buie 1996:26*

GIVING FORM

According to Kevin Lynch (Lynch 1992:46) we all have five basic public space rights:

- presence
- use and action
- appropriation
- modification
- disposition.

Which, simply stated, means:

> *...people should not only have access to public space, but also freedom of use, change, and even claim the space, as well as transfer their rights of use and modification to other individuals (Francis 1987:28-29).*

According to Francis, Lynch's spatial rights provide an effective measurement of a street's 'publicness' and democracy (Francis 1987:28-29).

In the station precinct, the streets have become multifunctional public spaces. According to Lynch (1992:91-92), multifunctional spaces should be noncommittal and plastic to the purposes and perceptions of citizens in order to allow each user to inform the forms with meanings and associations whilst still being expressive of the language of the greater whole.

"Space may be primordially given, but the organisation, use, and meaning of space is a product of social translation, transformation and experience. Socially produced space is a created structure comparable to other social constructions resulting from the transformation of given conditions inherent in life on earth…" *Soja 1980:210*

"The more responsibility users have for an area – and consequently the more influence they can exert of it – the more care and love they will be prepared to invest in it. And the more suitable the area is for their own specific uses the more they will appropriate it. Thus the users become inhabitants. Strong affective relationships may thus arise, which help to turn a space into a more friendly environment." *Hertzberger 1991:46*

COLLAGE AND DEMOCRATIC PLURALISM

Rowe and Koetter (1996:267) suggest collage as a method to approach issues of emergent city functions having to be accommodated and integrated into the urban built environment in order to achieve 'a democratic pluralism'.

Collage is a method in which all parts, established and emergent are allowed their own legitimate expression (Rowe & Koetter 1996:266). It pays attention to the leftovers of the world, preserves their integrity and gives them dignity (Rowe & Koetter 1996:287). It acknowledges that the way in which individuals and collectives organise disparate objects gives an indication of their real needs and requirements as well as their preferred way of doing things (Rowe & Koetter 1996:290). This method acknowledges that the city is perceived and enjoyed by a wide range of people of diverse class and character and that whilst it is relatively stable - its details are constantly being modified by its inhabitants. As a result, only partial control can be exercised over the city's growth and form, and essentially, in the making of the city, there is no final result, only a continuous succession of phases (Lynch 1992:2).

Thus, this method advocates 'an anti totalitarian' way of thinking and reasoning, allowing for the accommodation and coexistence of both order and disorder, resulting in a multiplicity of readings (Rowe & Koetter 1996:269).

CONCLUSION

In order for a street to be truly democratic, room should be left for the individual to infuse the space with some of their own identity – allowing for the coexistence of both order and disorder (Rowe & Koetter 1996:283). The more users can influence an area, the more care they will be prepared to invest in it. The more suitable it is for their specific uses, the more they will appropriate it, resulting in a friendlier environment (Hertzberger 1991:46).

> "...a distinctive and legible environment not only offers security but also heightens the potential depth and intensity of human experience" (Lynch 1992:5).

Figure 32. Venice street market with crates

Figure 33. Venice fruit display


Extra
Special
Times
Extra
Special
Scotch

Figure 34. Traditional medicine market, Warwick Junction

chapter 4

Chapter overview
Introduction
Case study 1: Lessons from Warwick Junction
Urban Solutions
Case study 2: Yeoville Market
Case study 3: Metro Mall Transport Facility and Traders Market
Case study 4: Baragwanath Public Transport Interchange and Traders Market
Conclusion

CASE STUDIES

CHAPTER OVERVIEW

In this chapter, the aim was to better understand the dynamics of informal trade in order to formulate a design strategy and approach to address informal trade on the chosen site. The case studies do not represent a comprehensive account of the entire market system. The aspects of the markets studied were selected for the degree to which they illustrate the issues that I wish to highlight.

The chapter looks first at existing projects and their outcomes and then at the station precinct in order to understand the nature of the day-to-day operations and requirements of traders and their use of space.

INTRODUCTION

In South Africa to date, the issue of informal traders has been addressed in conjunction with a number activities formerly viewed as 'illegal' (such as taxis and informal trading). These activities have been housed under the same roof – a top down approach – creating destination structures. Each of these case studies forms valid precedent as to the nature of informal trading, the day to day activities and role players in the street trading environemnt.

CASE STUDY 01 Lessons from Warwick Junction

LOCATION : Durban, Kwa-Zulu Natal, South Africa

DATE : This spontaneously formed market began in the 1980s. Its inception coincides with the arrival of 300 migrants, in South Africa, from India to work as indentured labourers in what was then the Natal colony (Dobson, R, Skinner C & Nicholson, J 2009:43). Warwick Junction has since developed over time and was later upgraded as part of an urban renewal project in 1995 (Dobson et al 2009:51-52).

DESIGNER : The Warwick Junction involved a number of government department of the eThekiwini Metropolitan Municipality, these include

- Architectural Services
- City Health
- City Police
- Development and Planning
- Drainage and Coastal Engineering
- Durban Solid Waste
- Electronics
- Housing
- Informal Trade and Small Business Opportunities
- Licensing
- Parks
- Protection Services
- Real Estate
- Roads
- Traffic and Transportation
- Urban Design
- Waste Water Management.

The Warwick Junction Project demonstrated that by catering for informal traders, environmental conditions improve. Many traders were found cleaning areas that were nowhere near their own trading sites. When asked why, they responded that they wanted the market to look good for customers and entice more customers (Dobson & Skinner 2009:85).

This project also demonstrates that it is possible to include street traders in urban plans in a way that adds to the vitality and attraction of cities. One observer noted:

> *The importance of this area is not just about livelihoods but the role it plays in city making (Dobson and Skinner 2009:85)*

FOOD
CLAY
BARBERING
MEALIE COOKING
SEWING
MUSIC
CLOTHING
SHOE REPAIR
FRESH PRODUCE
BEADWORK

Figure 35. Aerial photograph of Warwick Junction showing activites

MARKET ACTIVITIES

1. FRESH PRODUCE

- Painted squares on the ground demarcate areas in which traders may trade
- A carpenter in Warwick supplies benches and foldaway tables
- Surfaces fold away at night so that pavement can be cleaned and adhere to hygiene standards as per the National Health Act
- Where traders bring their own surfaces they must cover these with plastic as per the Occupational Health Act.

(Dobson, Skinner & Nicholson 2009:10)

Appropriate materials and design to adhere to hygiene and safety.

2. COOKING

- Low cost fast food
- Open fires and gas are hazardous to pedestrians in the urban environment
- Wood fires (found to be most efficient) were allowed to continue, provided the cooks relocated to a safer part of Warwick away from shops and pedestrians.

(Dobson, Skinner & Nicholson 2009:74-77)
(fig 37)

Cooking requiring open fires should be contained in designated areas away from pedestrian traffic. Gas fires must be carefully contained and accommodated so as not to endanger pedestrians.

3. MIXED TRADING

- Merchandise responds to changing needs throughout the day
- Morning – cigarettes and chips
- Midday – cater for pedestrians with specific needs; hardware, music and other durable goods
- Afternoons – evening meal

Figure 36. Durban Solid Waste pressure-cleaning trader stalls

Figure 37. Mealie cooking at new site away from pedestrian foot traffic

Figure 38. Pinafore trading stall - structure and mechandise define trading space

- Same site but different uses at different times of day.

(Dobson, Skinner & Nicholson 2009:17)

The retail unit should be able to accommodate multiple display options in order to accommodate different merchandise and grow according to quantity.

4. FOREIGN BARBERS

- Skilled but cannot find jobs – unrecognised qualification in South Africa
- Bring new ideas, knowledge, products and marketing adding to diversity
- For example, they introduced battery operated clippers, the locals resented this
- South African barbers use hand clippers which restrict haircut types.

(Dobson, Skinner & Nicholson 2009:30-33)
(fig 40)

Electricity an open ended system that can be improved on with more investment

5. PORTERS

- These men deliver goods and furniture to and from multiple storage sites
- They have the longest working day working from 4am to 9pm
- They have clients and must remember which site whose goods are stored in
- They work for wholesalers, customers and traders.

(Dobson, Skinner & Nicholson 2009:23)

On-site delivery of fresh goods and rent additional components on any given day

6. CARDBOARD COLLECTORS

- Supply larger collectors who, in turn, deliver the paper to be recycled by large formal recycling companies
- It was found that the middleman who purchased the

Figure 39. Crates act as support for selling surface

Figure 40. Barber stall - showing advertising and space making

Figure 41. Cardboard collectors' weighing facility

cardboard from the collectors paid them much less than market value

- Middleman insisted on weighing the cardboard at the end of the day
- After consultation, Mondi agreed to provide the scales, storage containers for the cardboard and the trolleys for the collectors
- One of the collectors was trained to manage the site
- Through this intervention collectors sold their cardboard directly to the recycling company
- The average price paid to the collector rose from 18 to 45 cents per kilogram – an increase of 250%.

(Dobson, Skinner & Nicholson 2009:79-81)
(fig 41)

Private sector involvement in order to get cheap goods for traders

SUMMARY OF GENERAL MARKET FINDINGS

- Congestion on pavements makes pedestrians more vulnerable to crime
- Route options reduce danger for pedestrians
- Large street furniture obstructing views contributes to increased incidence of crime
- Increased street lighting improves safety
- Unused object should be removed from the streets this improves safety so that people may not hide
- Less congestion makes places easy to clean
- Water and electricity should be provided to maintain sanitary conditions
- Must have different retail environments to suit the needs of products and traders.

CONCLUSION

This project forms a good precedent in understanding the day-to-day role players in a street trading environment. It also helps one establish the programmatic requirements of the study whilst leading to an understanding of the various components of a market that contribute to its vitality and efficient running.

*a comprehensive account of the Warwick Junction project can be found in Dobson, R & Skinner, C & Nicholson, J. 2009. Working in Warwick, Including street traders in urban plans. School of Development Studies, University of KwaZulu-Natal, Howard College Campus, Durban, 4017 Durban, 1-136. [Online] Available from: http://www.workinginwarwick.co.za/ [Accessed 5 March 2010]

Figure 42. Warwick Junction chicken traders

CASE STUDY 02 Yeoville market

URBAN SOLUTIONS PROJECTS

Urban Solutions, Architects and Urban Designers, a Johannesburg-based firm, has taken on a number of projects that provide public infrastructure for ordinary citizens formerly marginalised. In doing so, they have created agoras of a new democratic era in South Africa. These places have become spaces of vibrant commercial exchange and social interaction (Sheperd 2006:59).

These projects aimed at legitimising the informal realm by addressing the rights and needs of traders as well as issues of land ownership whilst contributing to the socio-economic dynamic of the inner city.

LOCATION: Yeoville, Johannesburg, Gauteng, South Africa

Date: Approximately 1998

Designer: Urban Solutions Architects and Urban Designers

YEOVILLE MARKET

- This project was initiated approximately twelve years ago.
- In this project, it was important to provide storage facilities for the traders.
- The project housed the informal traders under a shed structure with demarcations on the floor that indicated the rental parcels on which traders could operate.
- Sub-businesses were created to absorb the traders whose businesses were no longer feasible due to the housing of many traders under one roof.
- These sub-businesses included deliveries and running of public ablution facilities.
- This project was seen as a failure by the designers for there was little 'control' or system over the day-to-day operation of the facility (Hansen 2010).

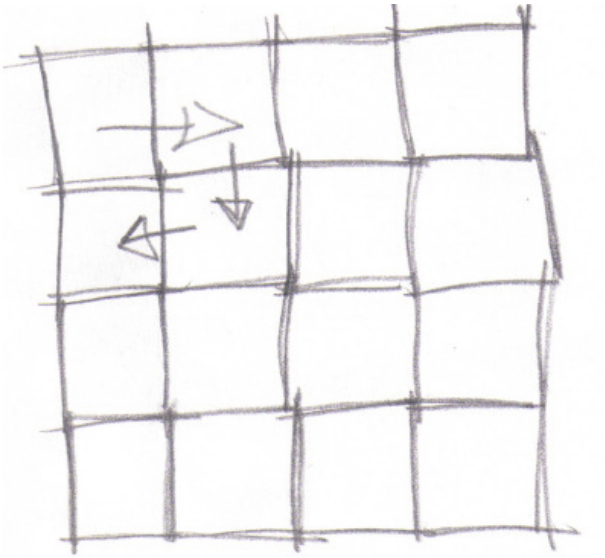

Figure 43. Yeoville Market concept drawing of organising system

Figure 44. Yeoville Market street elevation

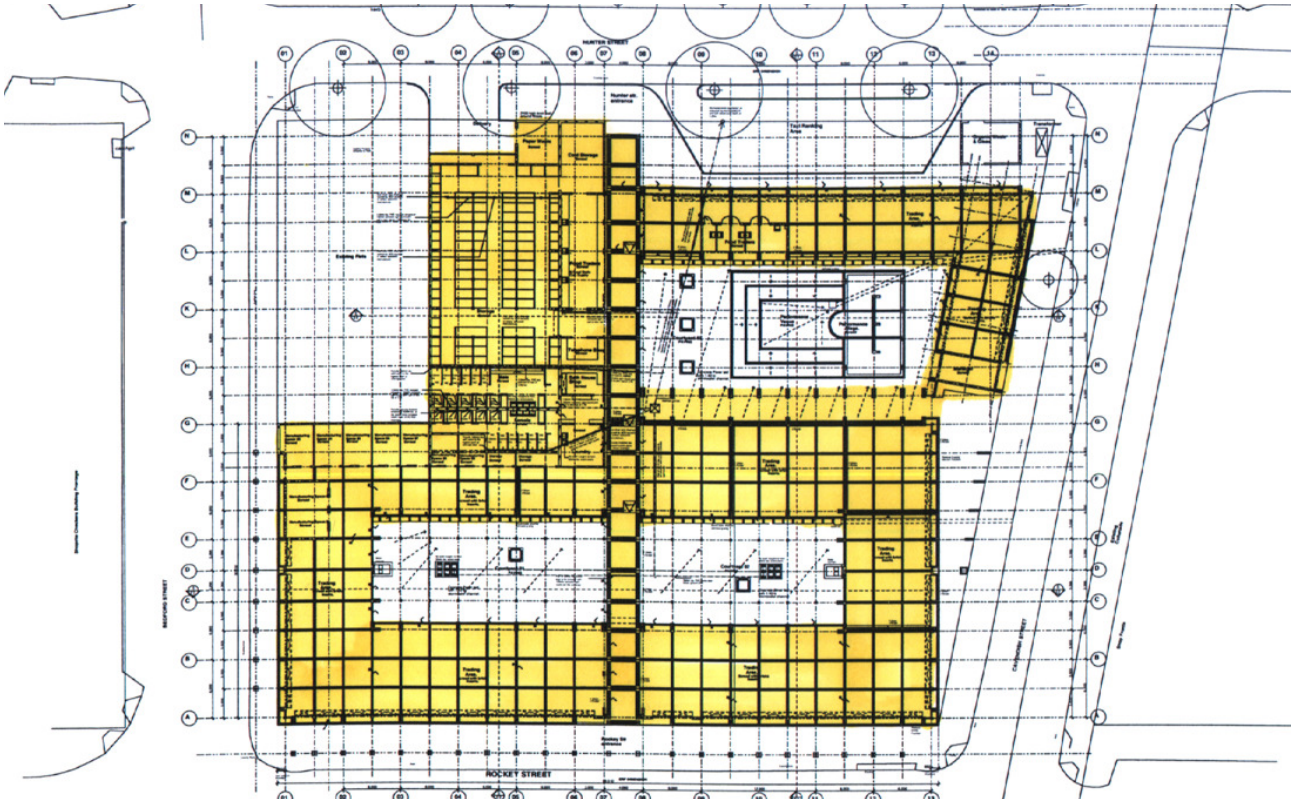

Figure 45. Yeoville Market site plan

Figure 46. Yeoville Market entrance

Figure 47. Yeoville Market Fresh produce trading area

Figure 48. Yeoville Market shoe repair claiming a wall

CASE STUDY 03 Metro mall transport facility and traders market

LOCATION: Newtown, Johannesburg, South Africa

DATE: 2000

DESIGNER: Urban Solutions Architects and Urban Designers

Metro Mall occupies a site of twelve hectares along Bree Street, one of the busiest streets in the Johannesburg inner city.

The main drivers of this project were the formalisation of the street trading community and the provision of a permanent home for taxis in the city.

One hundred and fifty thousand commuters use the facility daily. It provides 800 trader stalls and retail shops (Deckler, Graupner & Rasmuss 2006:61). Formal retail stores are provided along Bree Street whilst commuter traffic is forced through internal street fronts past trading facilities to access taxi loading areas.

There is a wide variety of trading spaces that cater for different trader needs. These include:

- floor space stalls with concrete counters
- large roller shutter cubicles
- fully-serviced destination outlets that house hairdressing salons and food outlets.

ADDITIONAL FACILITES PROVIDED

- Taxi association offices
- TV and pool halls
- Building management offices i.e. Metro Trading Company
- Areas for designated cooking mamas who may only cook for specific taxi associations
- Day care facility (This was later found to have failed) (Hansen 2010).

As an urban design proposal Metro Mall aimed at:

- making connections with the surrounding fabric
- completing the street grid and facilitating continuity of movement
- promoting mixed use urban opportunities
- reinforcing street boundaries with the construction of perimeter buildings with active street edges
- acknowledging the street as a public space
- allowing equal opportunity of access and freedom of movement.

CRITIQUE BY HANSEN

Architect Ludwig Hansen of Urban Solutions, Architects and Urban Designers has critiqued this project saying that to some extent the plan is too rigid and controlled and puts the traders into boxes. There is little opportunity for them to manipulate and vary the spaces as they would outdoors.

CONCLUSION

Metro Mall is a very important precedent because as a facility it is truly public and fulfils the real needs of its users. The activities along the edges of this mall also provide an opportunity for real street life (Deckler et al. 2006:63).

Figure 49. Metro Mall 'internal street'

Figure 50. Metro Mall bird's eye view 'internal street'

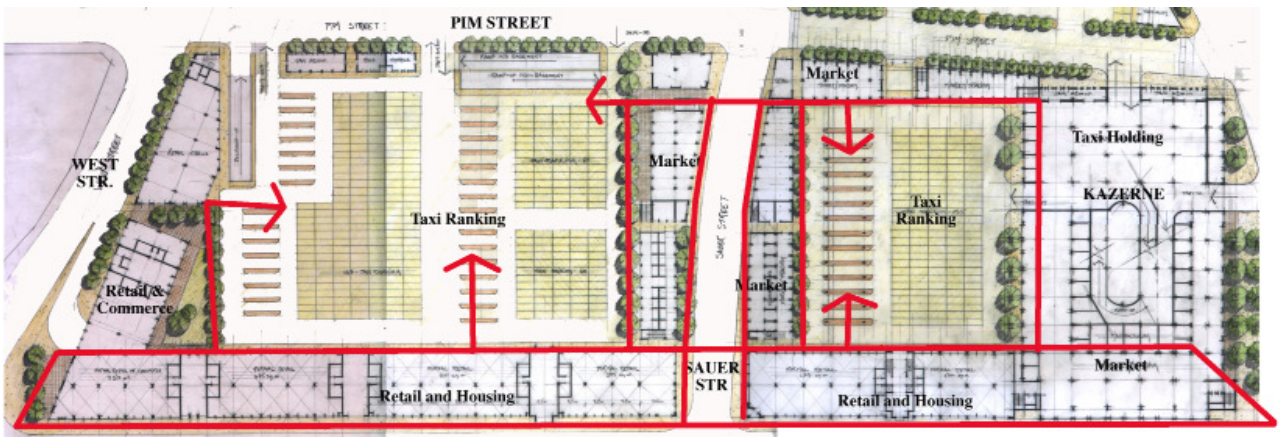

Figure 51. Metro Mall site plan

Figure 52. Metro Mall entrance sign and art-work made from recycled materials

Figure 53. Metro Mall trader claiming part of street pavement

Figure 54. Metro Mall communal wash-up facilities

Figure 55. Low-order traders on street pavement outside Metro Mall

CASE STUDY 04 Baragwanath transport interchange and traders market

LOCATION: Soweto, Johannesburg, Gauteng, South Africa

DATE: 2001

DESIGNER: Urban Solutions – Architects and Urban Designers

The Baragwanath Transport Interchange and Traders' Market is one of the busiest transport nodes in South Africa, & services most of Soweto's residents in getting to work and home. The site stretches 1.3km along Old Potchefstroom Road, which is a primary access route into Soweto. It is approximately 50 metres wide. The facility accommodates 500 street traders along with associated amenities. These include:

- storage facilities
- management offices
- support infrastructure

(Deckler et al 2006:65)

Unlike the previous project by Urban solutions, this project truly learnt from the day-to-day operations of street traders. The inception of this project required six years of negotiations and workshops involving various representatives of bus companies, taxi associations, street traders and city officials.

The project sees spaces for informal traders with varying degrees of control and freedom. Trader stalls vary in size to accommodate different types of businesses. The project is conceptually conceived as one long spine that connects commuters and provides spaces for traders to ply their wares. Traders who may not come to the market daily are accommodated in articulated niches along the spine whilst destination stalls and cooking facilities are accommodated in some of the support structures along the spine (Hansen 2010).

CONCLUSION

The project forms a good precedent as the arcade development, is very much like a street pavement. The design not only responds to the pragmatic needs of the traders, but also contributes to the overall aesthetic of the environment as well as a sense of place. The sculptural spine forms a focal point whilst establishing a legible structure to the market where both the traders and commuters can clearly read where various fixed and more transient stalls are located. The tall landmark structures with artwork on them create focal points for pedestrians, thus orientating them within their environment**.**

Figure 56. Concept drawing of Baragwanath Transport Interchange and Informal Traders' Market - organising system

Figure 57. Bird's eye view of Baragwanath Transport Interchange

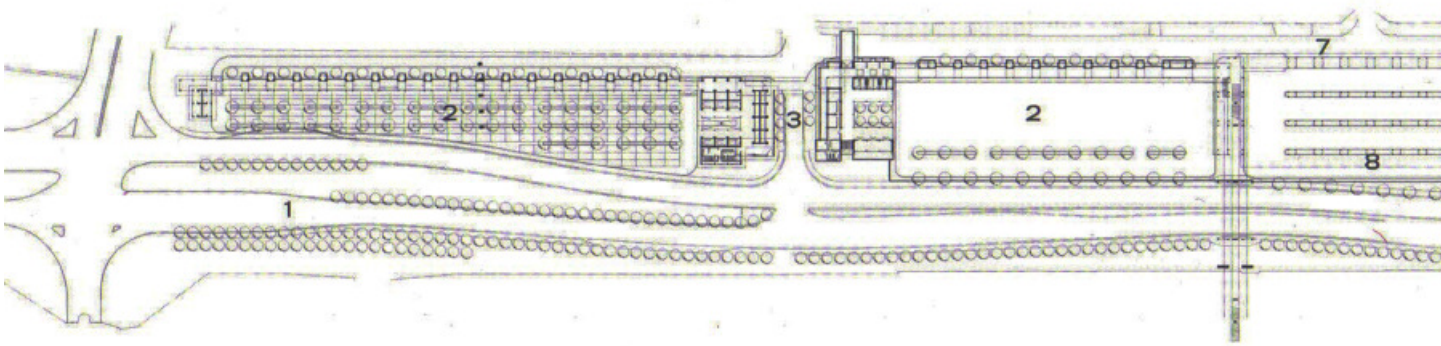

Figure 58. Site plan of Baragwanath Transporth Interchange and Informal Traders' Market

Figure 59. Internal view of arcade development

Figure 60. Portion of concrete spine acting as edge and seating

Figure 61. Traders claiming space outside spine

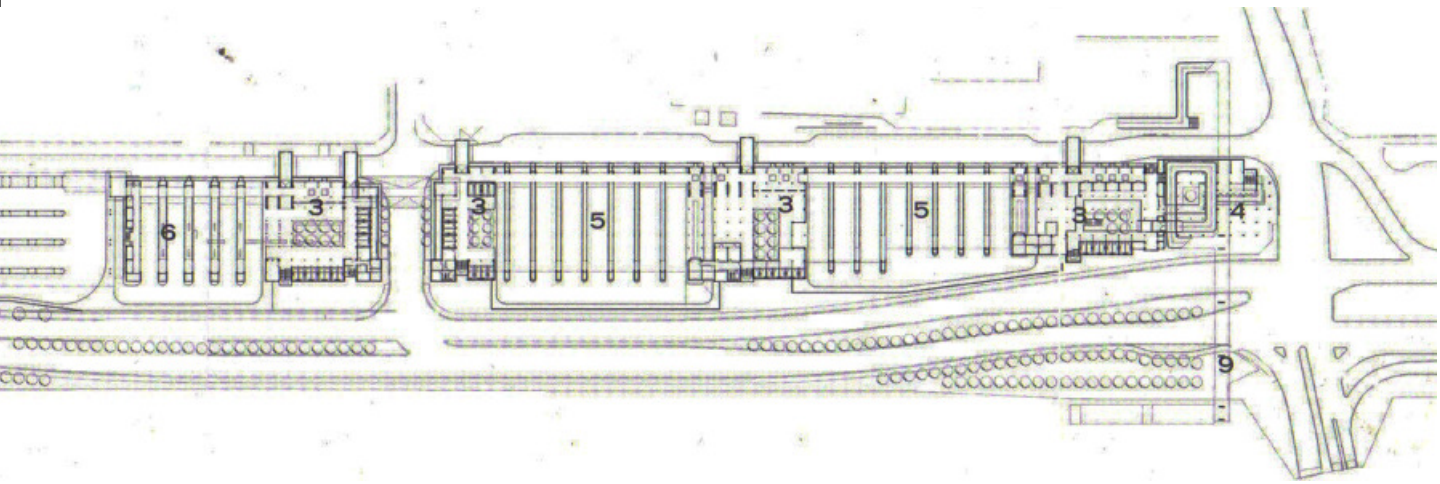

Figure 62. Traders claiming space using vertical element outside spine

Figure 63. Internal view with pre-cast concrete furniture

Figure 64. Internal view of vegetable trading area - sub spaces defined by vertical elements

Figure 65. Tree recently used to claim trading space

chapter 5

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Trader types
Interview with the Informal traders working committee (TITWC)
Socio-spatial dialect/Rationale
Enclosure Implies domination
The Post
Claim space in the urban environment
Private/Public realms
Conclusion

LEARNING FROM THE STATION PRECINCT
Station Precinct- City of Tshwane, 2010

INTRODUCTION

In an attempt to further come to terms with the needs of street trader's, a study was conducted at the station precinct. This study was conducted by means of passive observation as well as interviews with a few traders in order to understand their basic needs as well as the nature of their day-to-day operations and activities. This study was the first step in formulating a framework of functional and formal requirements of traders in the precinct.

It was found that there are five distinct trader types in the city of Tshwane, four of which are present in the station precinct. Each of these trader types is typified by their relationship to the urban environment – dependence on fixed facilities, space-making, use of urban furniture as well as their degree of permanence in the urban environment.

The trader types range from lower to higher order traders. Lower order traders are presently the most informal. They are not legitimate in the urban environment, and have no licence. They are on site to sell a specific type of product to a specific client base. They rely heavily on found objects for urban furniture and do not have a designated area from which to trade. They are subject to heavy fines and mistreatment by police. Higher order traders are more legitimate, they must adhere to regulations, trading from a designated space or built structures. They pay monthly rental and storage fees and are dependent on support from the built environment for shelter and services such as water and electricity. Higher order traders are only a step or two removed from the formal realm.

Figure 66. Traders using sreet sign to claim trading space

TYPE 1

- This traders actions and activities respond to their immediate needs
- Sells and carries only what can be carried on public transport
- Sells one type of product for only a few hours a day
- Urban furniture components are lightweight and easily assembled (if assembly required)
- Components are compact enough to be easily carried from site and around the city
- Minimal sun and weather protection
- Least restricted selling zones
- Product sold is geared to respond to the needs of a specific time of day

Current status in urban environment

- No vendor licence and no on site storage

Figure 67. Typical trader Type 1

TYPE 2

- More bulk than TYPE 1
- Storage unit doubles up as display, may be reconfigured
- Items must be sold on the same day or within a few hours
- On-site delivery of goods is possible
-
- Lightweight components
- Components carried quickly and easily assembled on-site
- Weather protection depends on where the individual stands

- Selling zones same as TYPE 1
- Products sold are geared to respond to the needs of a specific time of day
- On-site storage

Figure 68. Typical trader Type 2

TYPE 3

- More bulk and variety than previous types
- Has a daily full day presence in a designated area
- On-site delivery of goods is possible
- Light, medium and heavyweight components
- Components and goods pushed by trolley from storage area to a specific demarcated site
- Marquee creates sun and weather protection whilst enabling visibility
- Restricted selling zones
- On-site storage R20 per week
- Vendor licence R98 per month

Figure 69. Typical trader Type 3

TYPE 4

City of Tshwane Metropolitan Municipality's attempt to legitimise informal traders by giving them fixed stalls with municipality branding. Specific areas were identified for permanent vendors based on sufficient pavement width. They were placed on specific routes termed 'market streets'. These were streets that were low in profile containing few to no government buildings. If government buildings were present they were low profile government buildings. These street pavements were also deemed wide enough to accommodate informal traders without causing congestion conflict with pedestrians.

This initiative was driven by the need to:

- control tidiness of streets
- control congestion
- structure was envisioned as a complete product therefore no additional 'stolen' components would be required
- sun and weather protection
- vendors would only require R20 per week to store their unsold goods at a nearby storage facility

Figure 70. Typical trader Type 4

TYPE 5

- Permanent fixtures supported by built fabric
- Organisation of trade formally and legally
- Use of built structures to support informal realm
- Shop R200 per month
- Vendor licence R98 per month

Figure 71. Typical trader Type 5

INTERVIEW WITH INFORMAL TRADERS WORKING COMMITTEE (TITWC)

In a communication with Mr Setene Ketelele, Secretary of the Tshwane Informal Traders Working Committee (TITWC) (2010), it was found that there is currently no policy in place that governs the location of traders on the street pavement. The municipality currently does, however, grant informal trading licenses to traders that trade on street pavements. It is the view of the traders that the trading licence they pay for in order to trade should pay for municipality approved trading facilities and specialised equipment that will make them recognisable thus, giving them a sense of legitimicy in the urban environment. Currently the rental paid by traders does not entitle them to services such as water and electricity or any form of equipment. The traders are merely expected to have the licence on their person so that it may be shown to hawker patrol when they do inspections.

According to the (TITWC), there should be portions of the street pavement that are provided with services that are specifically allocated to street trade, allowing the traders to 'rent' that portion of the street. Along with that, traders would like to have:

- design and branding that makes traders that are compliant to regulations identifiable
- regulation with regard to types of foods sold, to adhere to safety standards
- advertising
- Appropriate clothing.

In their view, provision of the abovementioned services would aid them in being viewed as legitimate force in the city of Tshwane, which currently contributes 23% to the city of Tshwane's economy (Ketlele 2010). The provision of the abovementioned services would also help to differentiate traders who are regulated from those that are not. Through this it is hoped that the public would also recognise compliant traders and would support their businesses.

SOCIO-SPATIAL DIALECT/ RATIONALE

ENCLOSURE IMPLIES DOMINATION

As mentioned in Chapter 1, many traders prefer to locate themselves on the street pavement in order to take advantage of potential customers along these routes. In projects that house traders within built structures the street pavement surrounding these buildings remains populated with street traders attempting to ply their wares. This is so despite the availability of space within built structures that not only provides trading space but also a sense of legitimacy. However, within these built structures the trader is inevitably dominated by the agent in control of the enclosure (Habraken 1998:56). As found previously, in the Warwick Junction Project (Chapter 4 Case Study 2) traders require space that is flexible enough to accommodate variations in quantities and types of products sold on a daily, weekly and monthly basis, as well as enclosures and selling structures that can be adjusted to accommodate changing needs throughout the day and variations in the trading locations to best display products.

THE POST

Traders do not reject all forms of control. Even at their most basic type, where they do not have any form of enclosing infrastructure of their own, traders position themselves next to a vertical element or post. Claiming this as a selling space for the duration of their selling activity, this element aids in reinforcing their presence in the urban environment.

According to both Habraken (1998:57) and Ching (1996:121), enclosures are not the only forms that claim space. A vertical element claims space, dominating the space surrounding it generating a field of space about itself. When approaching a freestanding vertical element, at a certain point we seem to cross a boundary that defines the realm of space of the post. According to Habraken this is because vertical elements have an anthropomorphic presence that lend them power. These elements act as though one were encountering an individual who occupies space by force of personality and thus a personal domain. Trees, municipal poles, street lights and columns all convey a similar spatial presence (fig 72 & 74).

Figure 72. Trader claiming space between two posts

Figure 73. Trader claiming space in the vicinity of a post

Figure 74. Wall defining space on which it fronts

In summary, vertical elements are details which help to establish stopping zones in public spaces. If spaces appear empty and without trees and columns, users find it very difficult to find places to stop at. Good cities for staying out in have irregular supports in their outdoor spaces (Gehl 1987:155).

CLAIM A SPACE IN THE URBAN ENVIRONEMENT

As described previously, external vertical elements allow users to claim space in the public realm. This element provides a sense of security for traders and claims a unit of space as their territory. Traders in the middle of the order, typified by TYPE 3 use a sheltering device to claim a space (fig 76 & 78). The marquee tent demarcates the claimed space with its four vertical supports. A unit of space is established by the four posts, and in some instances an umbrella with a single support. These sheltering devices claim space an do not require a larger spatial context for definition, but relate freely to it.

The four vertical elements of the widely-used marquee tent define the edges and corners of a 'claimed' space, marking the limits of the unit of space whilst maintaining visual and spatial continuity with the surrounding environment (Ching 1996:122) (fig 79). These four vertical elements have a strong presence in the visual field and are thus instrumental in defining a discrete volume of space and enclosure for the trader within it. At each spatial plane two posts establish a transparent spatial membrane caused by the visual tension between the posts (Ching 1996:120**).**

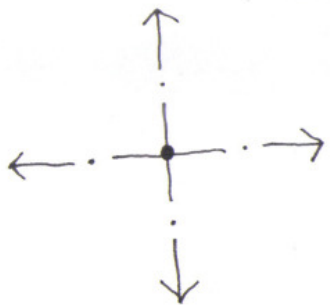


Figure 75. Single vertical element defining a spatial zone about itself

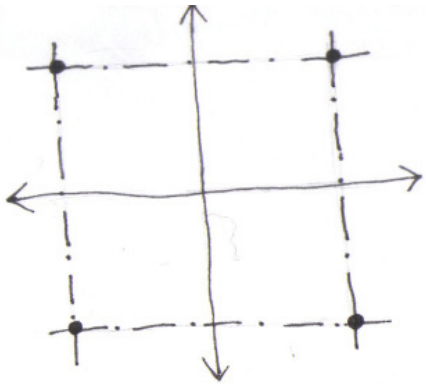


Figure 76. Four vertical linear elements defining the perpendicular edges of a volume of space

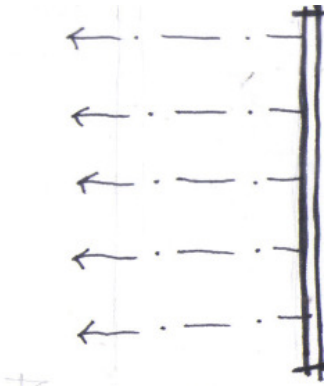


Figure 77. Single vertical plane articulating the space on which it fronts

Figure 78. Typical marquee tent supports define the edges of a volume of space

"A repetitive series of 'post' elements along the perimeter of a unit of space strengthen the definition of the volume of space." Ching 1996:123

Figure 79. Typical marquee tent establishes a private zone within a larger spatial context

PUBLIC/PRIVATE REALMS

The unit of space claimed by the trader in relation to the surrounding environment becomes a private space but can also act as an intermediate zone between 'private' and 'public realms', particularly when the space doubles as a social space as is the case when pedestrians gather to socialise with the trader.

Along the street pavement the street side is treated as the private side in relation to the selling space. This is because the trader is 'anonymous' on that side. The side of pedestrian traffic, where the trader may interact with the passerby, is treated as the public side.

In areas where there is no vertical element available and/or there is a high volume of pedestrian traffic, particularly when the pavement width is narrow, traders put their trading surface closer to the ground plane .

The space between the selling surface, the ground plane and the trader becomes the private space were the trader is able to conceal personal belongings and cash.

In this way, the trader establishes a 'semi-private' space close to the ground, whilst his goods are also safe from thieves who might steal merchandise as they pass by. In this instance, the height of the selling surface is +/-430mm high or seat height. At this height the selling surface acts as an edge between the trader and potential customer. It does not, however, provide a sense of enclosure for the trader (Ching 1996:131).

In areas where the trader feels less vulnerable, for instance where the trading space is well defined by one or more vertical elements, traders will typically raise the surface height of the selling surface to about+/- 860mm (waist high) (fig 82). Without the vertical post/s defining a unit of space, the trader would be vulnerable to theft in high traffic areas as a private realm would not have been established. The waist high selling surface reinforces a sense of enclosure of the trader's domain as well as between the trader and potential customers, whilst allowing visual continuity with the adjoining space (Ching 1996:131).

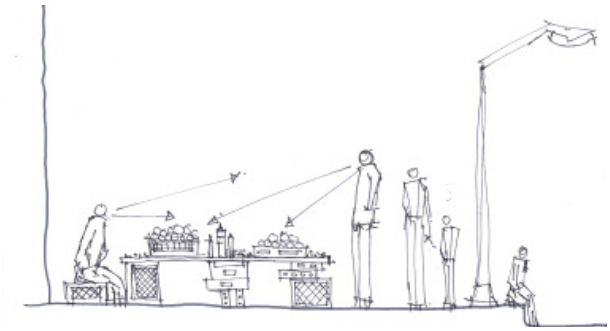


Figure 80. Low selling surface in a high traffic area - surface acts as an edge

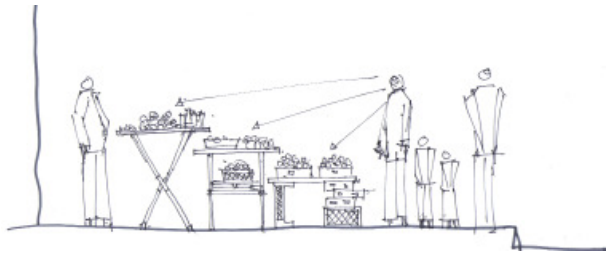


Figure 81. Staggered selling surface

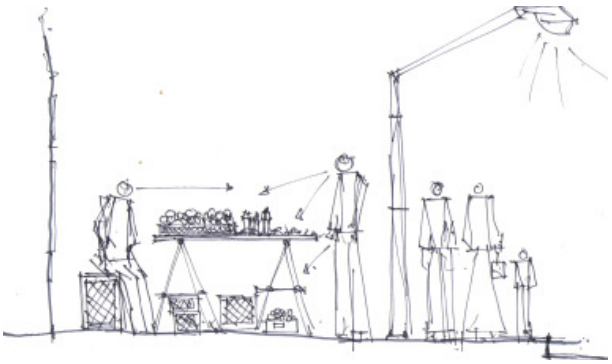


Figure 82. Waist high selling surface in a well articulated context acts as a boundary

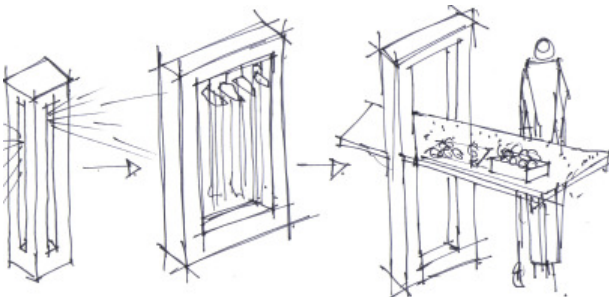


Figure 83. Exploring the possible variations of the post

CONCLUSION

The use of the urban environment by the informal traders relates to the way in which they are able to define their claimed space and make their presence known a as well as their ability to establish zones of privacy in relation to potential customers. In essence, the privacy of the informal traders is defined relative to the ground plane and the availability of a post.

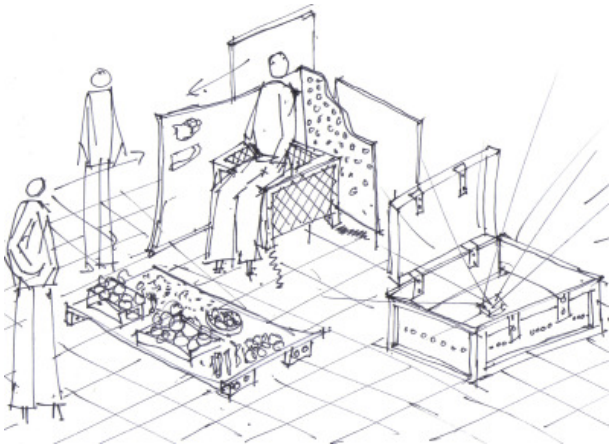


Figure 84. Concept sketch - trader using all belongings to claim and define space

Figure 85. Traders claiming space within the spatial realm of a post

Figure 86. Typical non user friendly bulky storage unit used in the Pretoria Tshwane CBD

Figure 87. Trader using compact storage unit in Newtown Johannesburg


PARMALAT

Figure 88. Empty chairs

6 Precedent studies

PRECEDENT STUDIES

"To dwell is to be protected from elements, but it is also a mode of belonging." Quinn 2003:161

INTRODUCTION

The following precedents outline the approach to be used in designing for the individual trader types derived from the conceptual approach of British contemporary artist Lucy Orta, who designs for people on the margins of society.

Fashion i.e. wearable shelter is the most basic shelter. Coupled with fashions ability to construct identity, it becomes a starting point in generating the design from trader TYPE 1. Rather than seeing this trader as having a fixed point of origin, the act of dwelling is interpreted existentially as 'being' in space rather than mediated specifically by place (Quinn 2003:161). As such the precedents outline in sequence how the trader's urban furniture will be designed, starting from the most basic trader (Type 1), which is the least dependent on support from the built environment for day to day operation.

Throughout human history clothing has provided the body with wearable shelter. Both architecture and fashion remain rooted in the basic task of defining space and protecting the human form (Quinn 2003:2). Clothing and then architecture negotiate the relationship between private spaces and the public realm whilst defining our identity and place in society (Quinn 2003:5).

The fashion analogy emphasises the hypothesis of this thesis that advocates that the traders have a right to occupy space in the urban environment independent of authoritarian structures that were likely their source of alienation in the first place. It recognises that many street traders have suffered trauma in institutions or have failed to find a place in authoritarian structures that has led to their existence outside these structures (Quinn 2003:161).

EMERGENT ACTIVITIES

LUCY ORTA

The work of Lucy Orta, a British contemporary visual artist, is focused on addressing social conditions that condemn individuals to an existence outside the margins of society by bringing the invisible poor and disenfranchised into the foreground. She explores how, as well as the extent to which clothing and shelter can become one, she uses clothing to produce and define urban space, conceptually as well as materially recognising fashion's potential to describe degrees of separateness and individuality (Quinn 2003:158).

She explores the nature of social bonds, networks and systems of habitation that create community and sense of belonging through her works, demonstrating social inclusion and security that are often taken for granted (Quinn 2003:158).

She interprets the poor as urban wanderers who want to become visible and to receive sustenance (Quinn 2003:160). These urban wanderers, much like informal traders, participate in the urban fabric whether they are permitted to or not. According to Bradley (Quinn 2003:160): She operates in opposition to the political mandates that reassign the marginalised to alternative sites isolated from the mainstream public realm by merging public place, private space, architectural form and intimate apparel into a structure that can be manipulated and interpreted in personal terms according to need.

She creates her garments using discarded materials commenting on the need to reclaim wasted material and abandoned spaces (Quinn 2003:159).

TITLE: NEXUS architecture
DESIGNER: Lucy Orta
LOCATION: Exhibition has travelled around the world including Johannesburg
DATE: from 1993- 1998

DESCRIPTION

The garments, much like modular systems, are interchangeable. Being modular, the garments give a sense that although people are individuals, they are also components of a whole (Quinn 2003:175). Modular systems in architecture offer inhabitants an opportunity to expand and customise their environments. The wearers are linked through detachable chords which, when connected, represent the collective body illustrating the value of collective action and collaboration efforts (Quinn 2003:159). This work also suggests that physical bonds and proximity in turn generate social bonds (Quinn 2003:161).

Figure 89. NEXUS architecture

TITLE: REFUGE WEAR
DESIGNER: LUCY ORTA
LOCATION: Exhibition has travelled around the world including Johannesburg
DATE: n.d.

DESCRIPTION

Each individual piece of Refuge Wear was designed as a personal environment that could be varied in accordance with weather conditions, social needs, necessity or urgency. (Quinn 2003:161

Figure 90. Refuge wear

TITLE: SPRING FALL 2007 COLLECTION
DESIGNER: Hussein Chalayan
DATE: 2007

DESCRIPTION

Fashion designer Hussein Chalayan establishes a dialogue between the body and the environment through this garment (Quinn 2003:128).

The dress is envisaged as an interactive machine that roams the city and engages with buildings as well as with the public. In so doing it stimulates a relationship with public space by adding personal experience into an urban environment which can otherwise be anonymous and harsh (Quinn 2003:130).

According to Chalayan:

> *"If you alter the way the body comes across in space around it, then the body alters everything in the space that affects it…The dress can also be transformed invisibly by the environment" (Quinn 2003:130).*

Thus wearable elements that fit into the public realm could make the marginalised traders visible, giving them a public identity whilst fostering a construction of self (Quinn 2003:131).

Figure 91. Spring/Fall 2007 Collection

TITLE: After Words
DESIGNER: Hussein Chalayan
DATE: 2004

DESCRIPTION

The After Words collection/exhibition expresses the trans mutability of fashion as textiles that initially appeared to be chair covers transformed into sophisticated dresses. The collection demonstrates how functional objects can be disguised as clothing and worn on the body (Quinn 2003:126). Some of the garments were equipped with pockets and compartments that could hold essential belongings (Quinn 2003:125).

Following transformation of the chair covers into garments, the models were able to transform the furniture designed for the collection into pieces of luggage that were carried off the catwalk. This collection demonstrates fashion's potential to create a mobile environment (Quinn 2003:128).

Figure 92. Afterwords

TITLE: Umbruffla
DESIGNER: Acconci Studio, Vito Acconci
DATE: 2005

DESCRIPTION

This design is conceived of as a new umbrella you can wrap around yourself. One end is fixed to the waist whilst the other is fixed to the wrist so that both hands are free. It is made from two-way mirrored mylar. From outside the surface is mirrored, so that one can see through from the inside, but is camouflaged by reflections of the city whilst walking. From outside the surface is mirrored, so that one can see through from inside but camouflaged by reflections of the city whilst walking.

Figure 93. Umbruffla

TITLE: Bag panel dress
DESIGNER: Unknown
DATE: n.d.

DESCRIPTION

Textile traditionally used as shading or luggage is cut into a panel simply used as clothing. Innovative use of a common material in an unconventional way.

Figure 94. Bag panel dress

TITLE: Final Home
DESIGNER: Kosuke Tsumara, Japan
DATE: 1991 and ongoing.

DESCRIPTION

A brand of clothing that adapts and transforms to different needs sees the fusion of clothing and accommodation to become the ultimate shelter. Zip-fastened pockets on the clothing can be used to stuff ripped up newspaper for added insulation as well as emergency food and medical supplies (Tapham 2004:66).

Figure 95. Final Home

TITLE: Home Room
DESIGNER: Kosuke Tsumara in collaboration with Idée, Japan
DATE: 2000.

DESCRIPTION

An extension of the final home clothing line, it is more obviously recognisable as a form of shelter. A textile containing zip fastened pockets is used to cover a tubular frame (Tapham 2004:66).

Figure 96. Home Room

TITLE: Emergency Modules A - E
DESIGNER: Gregario Brugnoli-Errázuriz and students at the Architecture school, Faculty of Architecture and urbanism, Universidad Central de Chile, Santiago Chile
DATE: 2002

DESCRIPTION

A series of instant dwellings designed for conditions where traditional construction techniques are too slow. The materials used to manufacture the shelters are inexpensive, practical and readily available. The shelters are built using plastic plumbing tubes for the structural framework and plastic sheeting as skin.

Transparent plastic is used in core areas whilst opaque black plastic is used to conceal private spaces such as those used for sleeping.
In Module C one of the walls opens out to form and awning.

In Module B and D private and public spaces are defined by opaque screens which can be rearranged as needed (Tapham 2004: 72).

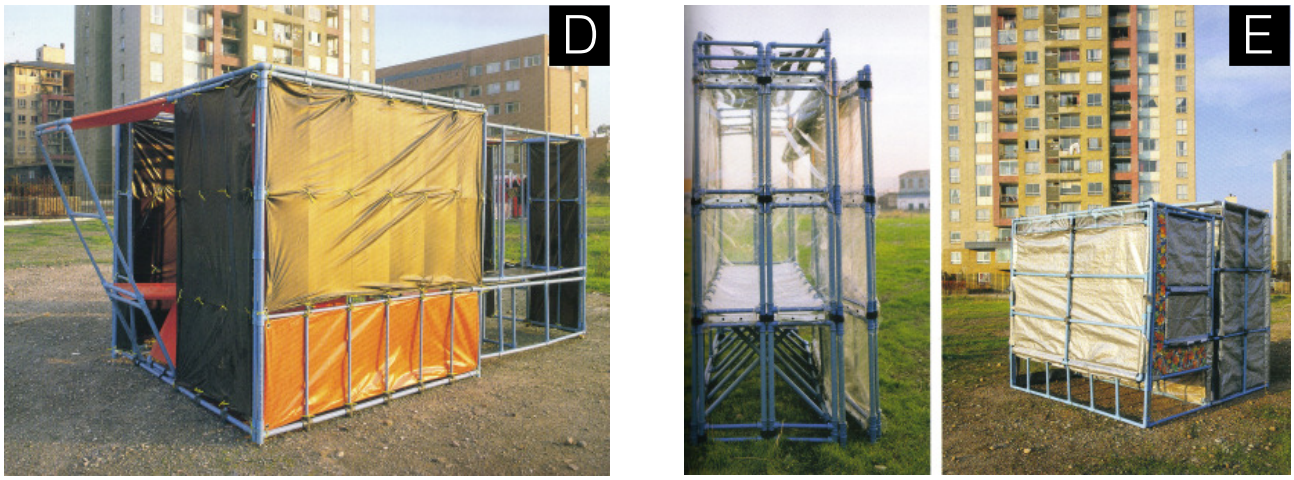


Figure 97. Emergency modules A - E

TITLE: 'FLEXSPACE| TEMPORARY HABITAT'
DESIGNER: Saranont Limpananont
DATE: n.d.

DESCRIPTION

This temporary habitat uses the human body as part of its structure. If nobody is inside, the habitat collapses and becomes junk. With the body as part of the structure, the cardboard provides a personal flexible space for the user. The form and space of this habitat can be adjusted to many patterns depending on activity. The second example with the male user demonstrates the possibilities of claiming a unit of space and a bit of privacy in an otherwise private domain. This project demonstrates that the human is the most important factor in any habitat and that a habitat is useless if nobody utilises it (Limpananont, S. n.d.).

Figure 98.
Emergency modules A - E

TITLE: Park Bench House
DESIGNER: Sean Godsell, Australia
DATE: 2002

DESCRIPTION

The Park Bench house acts as a bench by day and a bed at night. It has no armrests and other barriers that may prevent people from lying down. By lifting up the seat the user may climb inside. It is a simple shelter for people who sleep in public spaces. It is fitted with a solar panel that powers an automatic light that glows when the bed is occupied (Tapham 2004:26).

Designer Godsell recognises that a few members of the homeless community prefer sleeping on the street to staying at a shelter. Thus he provides space for rough sleepers acknowledging that barring rough sleepers does not solve the issue of homelessness.

Figure 99.
Park Bench House

TITLE: Public seating system
DESIGNER: Bartoli Design, Italy
DATE: 2010

DESCRIPTION

Modular benches connect by way of half loops. Create opportunities for privacy or sleeping under loops.

Figure 100.
Public seating system

TITLE: Sonntag Seating
DESIGNER: Tim Kerp
DATE: n.d.

DESCRIPTION

A modular curved bench that allows for a variety of seating and relaxing positions. The modules allow for a variety of configurations that create different spatial connections and facilitate various interactions with friends and strangers (Dornob n.d.).

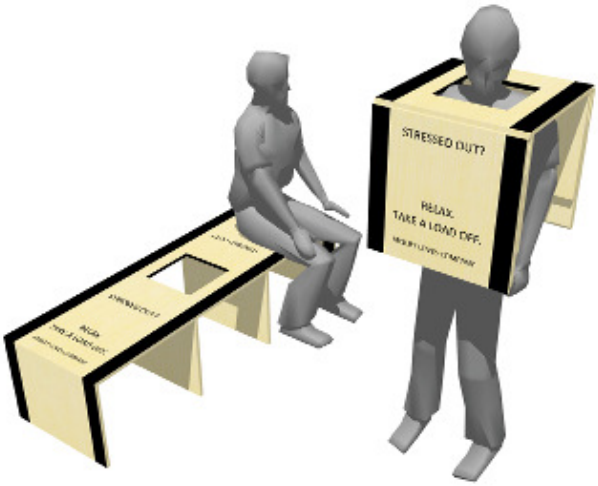
Figure 101.
Sonntag Seating

TITLE: Change of state
DESIGNER: Justin Hipp
DATE: 2009

DESCRIPTION

A participatory performance piece explores the subject of stress and its alleviation through the utilization of a transformable object that incorporates metaphor, notions of protest, and the invitation to shared experiences. The device used is a transformable object which, in its primary state, is a common urban object (a bench) that often links two disparate people in physical space, thus allowing for the possibility of physical proximity which may encourage dialogue. The bench becomes an invitational space for shared experiences. It is not simply a static entity; it can be reconfigured to become a portable sign board carried on the shoulders for a performance (Networked Cultures and Participatory Media: Media City 2009).

Figure 102.
Change of State



TITLE: ChairStoolBench
DESIGNER: Yvonne Fehling and Jennie Peiz, Remagen, Germany
DATE: 2007

DESCRIPTION

The chair stool bench reads as one plank of wood with traditional chair shapes that emerge and disappear from a large plank of wood. The design creates a range of seating options. Along the same bench the user may choose the desired level of comfort choosing a chair with a back as well as the degree of separateness within the public realm (Corpron & Auyeung 2007).

Figure 103.
ChairStoolBench

TITLE: Kontrast
DESIGNER: Uros Vitas
DATE: n.d.

DESCRIPTION

This multipurpose bench can be used as a bench and stool with adjustable length. Aside from being a bench, the Kontrast can also be used as a stool and table with adjustable length. I like the idea of it being a multipurpose bench. In the long term it saves cost from buying another product for different purposes (Home Dosh. 2010).

Figure 104.
Kontrast

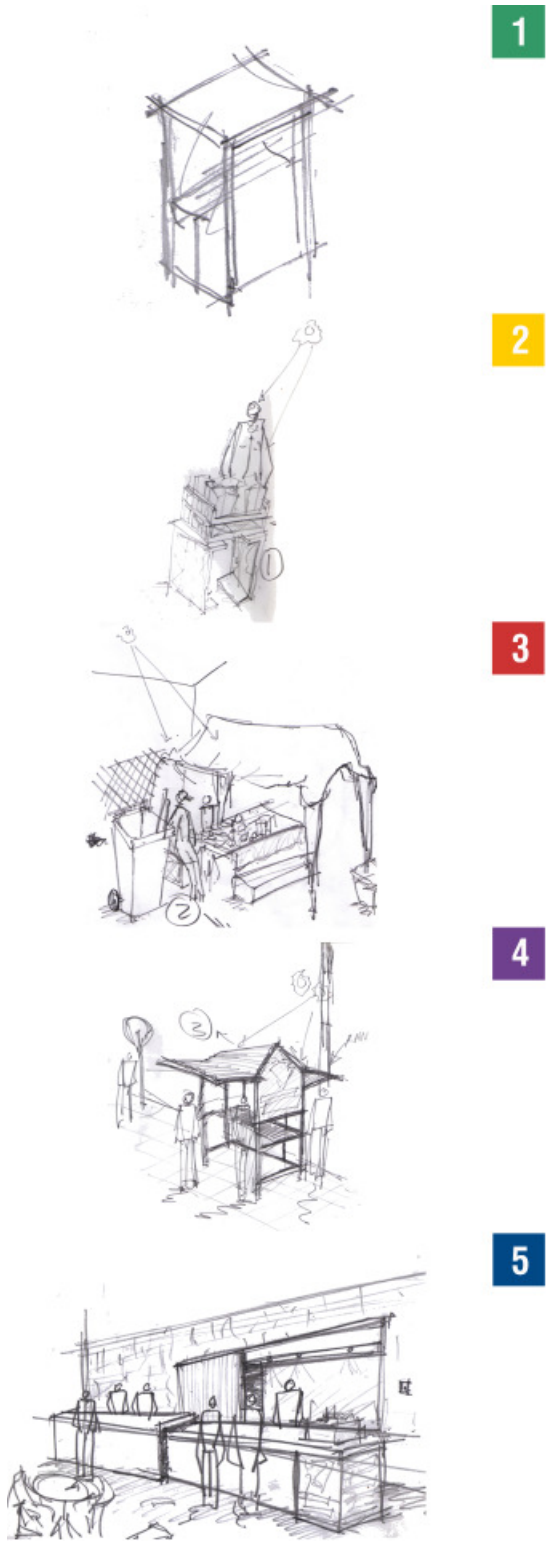


Figure 105.
Summary of trader types

Figure 106.
Trader with self-made selling unit

Design development

chapter 7

DESIGN DEVELOPMENT

"Interior designers and architects frequently custom design commercial and office tenant space, specifying a variety of partitioning systems, raised floors accommodating cabling, ceiling systems integrating acoustic tiles and light fixtures, and so on. Specialized "fit-out" contractors install systems, parts and other amenities for proper occupation, creating and articulating interior space." Habraken 1998:72

INTRODUCTION

> *"Shopping malls distinguish clearly between building and infill as well. Tenants rent empty space to be fitted out to their specifications by specialised contractors. When franchises of large chains adapt standardised details, fit-out may be completed almost overnight." (Habraken 1998:72)*

Previous chapters have revealed that the activity of informal trade is in fact a dynamic one. Case studies have revealed is that traders use elements and objects in the urban environment to define their space and claim a sense of legitimacy. ie. posts, surfaces acting as selling points as well as edges, boundaries or enclosures.

Most importantly there are different trader types that have specific requirements for their day to day activities and operations. There are also recurring systems, patterns and types in the projects and contexts explored. These common traits form the universal elements of informal trading. They are the the basic requirements necessary in order for traders to create a sense of legitimacy along the streetscape and to allow traders room to menouvre within the system. As such the systems, patterns and types derived from the case studies and context, act as a framework of principles within which variations can be made.

It is equally important that within this framework, traders be able to improvise, suggest new typologies in order to create new instances. This will contribute to making the system sustainable and reinforce a sense of individuality and ownership amongst the traders, whilst fostering a sense of belonging and community.

> *Variations within a theme enables individuals to define themselves within the context of a given group or society. The theme connects the user and society within a given context. In each variation, we conform in order to create' (Habraken 1998:230)*

DESIGN PRINCIPLES

Summary of the basic requirements to enable legitimacy of informal trade along the streeyscape. These Principles are derived from an understanding of traders' use of space derived from case studies, passive obsrevation as well as precedent studies.

Principle 1: The Post

Principle 2: Integrate with urban fabric, Spine of activities with support infrastructure along it

Principle 3: Privacy relates to heights of surfaces and post

Principle 4: Elements from different types able to connect enabling progression

Principle 5: Adjustable trading unit that is easily packed away and stored

Principle 1: The Post

The presence of a post element is crucial in allowing the traders an opportunity to trade. A study of a variety of contexts revealed that traders do not reject all forms of control but seek a vertical element to relate to in order to trade. This vertical element, be it a tree, a wall, a municipal pole or traffic light aids the trader in claiming a unit of space. It acts as a formal sign that the trader may relate to. During day to day operations the location of a trader is described by this sign ie. "the trader at the no parking sign." Traders look for recognisable forms and signs to which they can relate in order to claim a unit of space and establich a sense of legitimacy.

Principle 2: Integrate with urban fabric, a spine of activities with support infrastructure along it

The post element is currently integrated with the urban fabric and shows signs that the traders require formal signs to indicate their legitimacy. Baragwanath Transport Interchange and Informal Traders Market functions much like the street environment, providing a legible environment along which the traders may locate themselves. Again, the forms and spaces created by the concrete element vary through the site. Traders locate themselves close to and claim trading space relative to articulated elements.

Principle 3: Privacy relates to the heights of surfaces and the post

All of the contexts studies revealed that traders arrange their possesions differently in different environments. The react to pedestrian flows and and the quantities of goods that they have to sell. When they are in an environments where they cannot easily articulate their territory (high traffic pedestrian environment or wide open space) they tend to position the trading surface closer to the ground plane. When their trading area is well articulated, traders will raise the height of the selling surface.

Principle 4: Adjustable trading unit that is easily packed away and stored

The Warwick junction project revealed that some traders, particularly lower order traders typified by 1-3 vary the quanities and types of goods sold throughout the day. As such traders need adjustable selling units and elements that can be used in a variety of ways.

A visit to the informal trading storage shed on Proes street revealed that traders needed more compact components that could be easily disassembled and made compact

Principle 5: Where possible elements from different types able to connect in order to enable progression.

The Warwick junction project revealed that traders may not only act as a single 'type'. In some cases, as they vary the types of products sold they may act as a type 1 or a 3 or may move up in the system. Therefore, components should as much as possible, be able to be reused by different trader types.

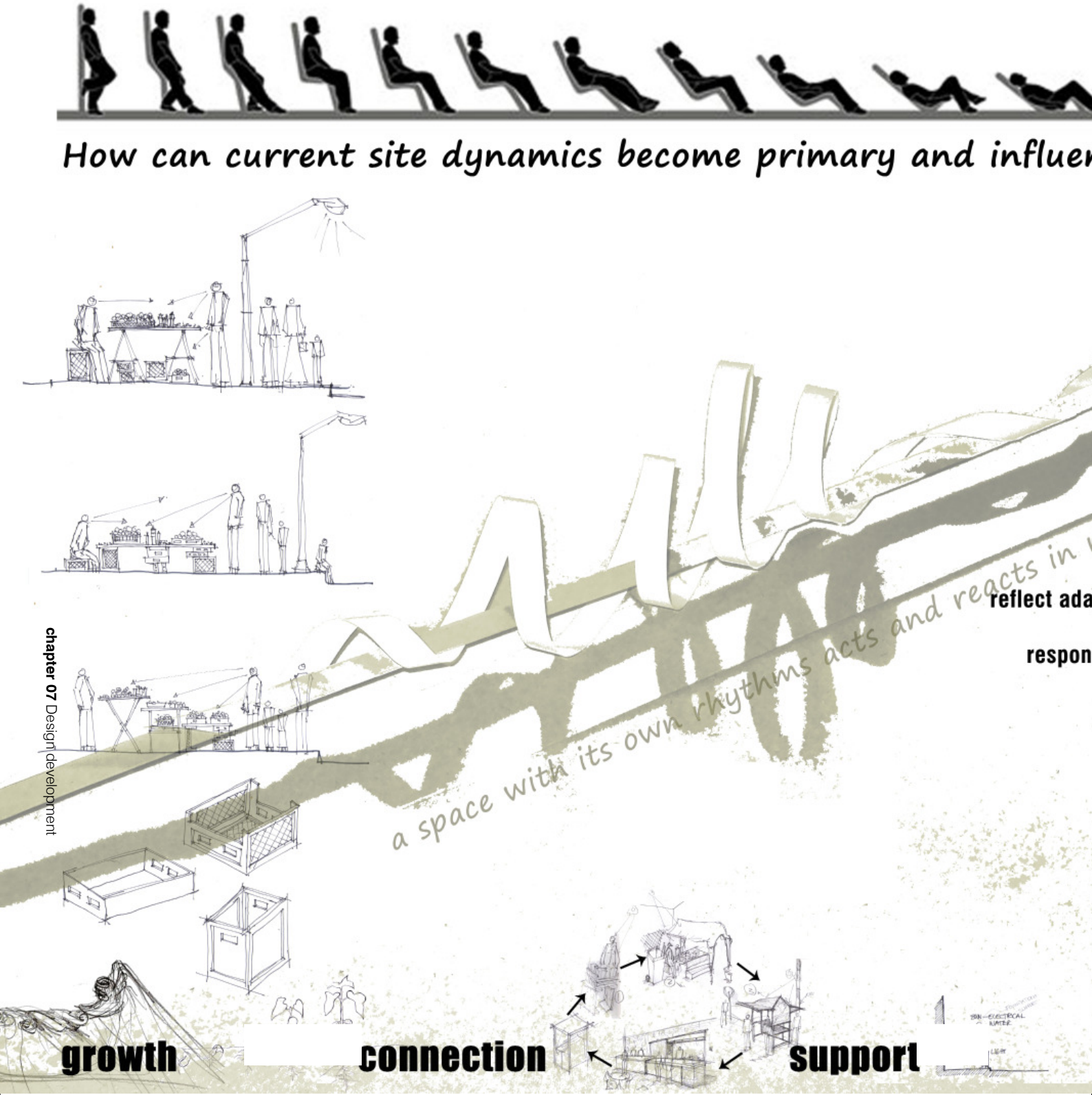


Figure 107.
Conceptual approach

DESIGN APPROACH

The task set out is to design a system that evolves from the dynamics of informal trade. The use of space by traders and space defining elements have been explored in previous chapters and summarised earlier in this chapter. What has not been explored are the objects that the traders use. Upon studying the site it was found that sasko bread crates are the most commonly used. These crates are sourced from the fresh produce market.

Together with Khula and Seda it is envisaged that the fresh produce market could become an even bigger partner in developing informal trade at the station precinct (refer to page 25 & 26). Once the project gets off the ground, traders could use the crates from companies freely and legally.

The Warwick Junction Project revealed that within the informal trading system there was a subsystem of porters who delivered furniture and goods to and from multiple storage sites. These porters work for wholesalers, customers and traders (Dobson & Skinner 2009:23). The porters could be responsible for collecting goods from wholesalers and and delivering them onsite to traders at the begining of each day.

SASKO CRATES

Traders use these ergonomically designed crates to display, contain and support their merchandise. It is designed to carry goods in appropriate quantities comfortably. Given that it is important that traders are able to vary their components, the crate is explored as the starting point in defining a module.

Upon investigation is was found that the sasko bread create used by the traders was 160mm high, thereby giving it a relationship to Le Corbusier's Modular.

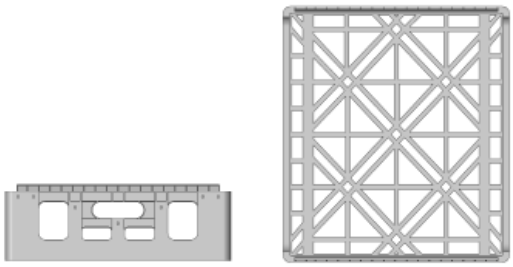


Figure 108.
Commonly used clover and Sasko crates

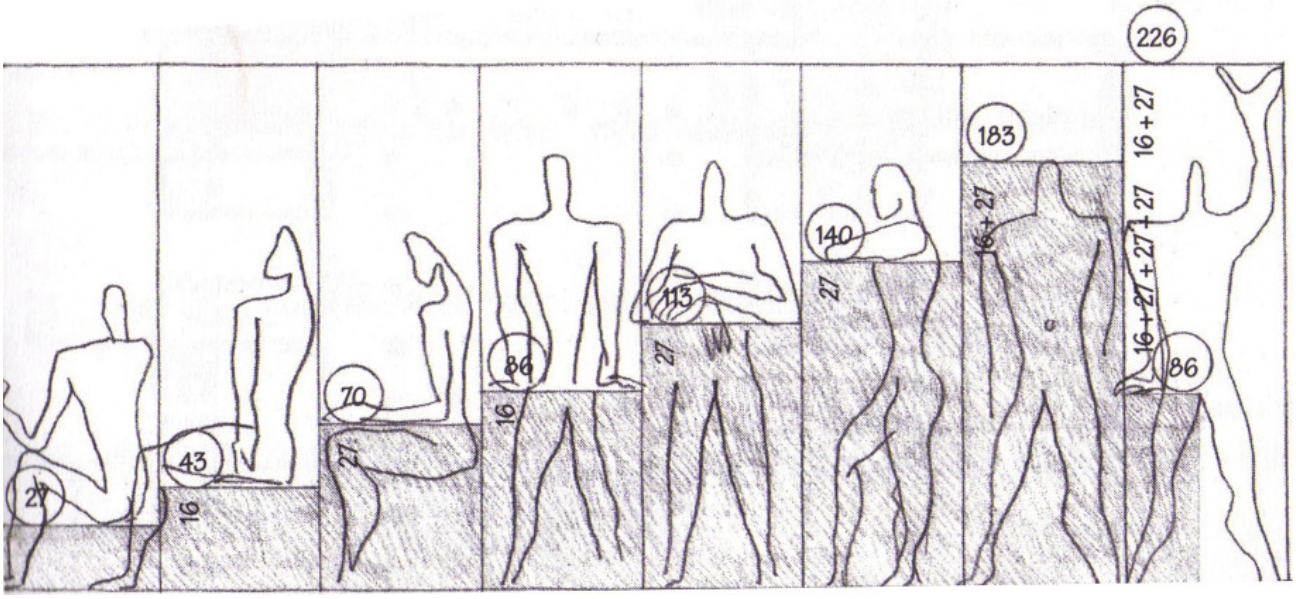
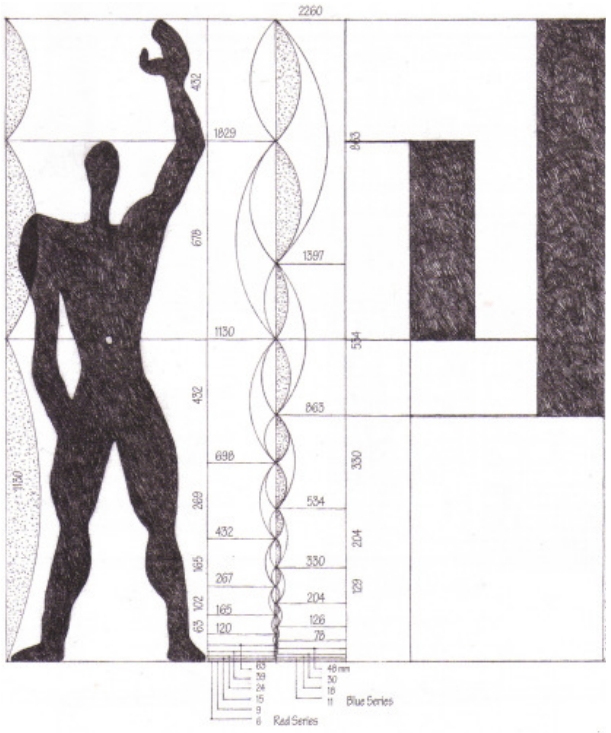


Figure 109.
Le Corbusier's Modular system



LE CORBUSIER'S MODULAR SYSTEM

According to Peter Blake (1966:138), this modular represents a culmination of Le Corbusier's life's work which sought to bring a rule of law into art. Unlike most modular systems that rely on an infinite repetition of a single dimension, Le Corbusier's module relies on an infinite series of related modules based on the ancient 'Golden section'. Le Corbusier found the link between this golden section and the human form. The following is a description of the Modular:

> *In general, the Modular starts with the division of the height of a man into two proportions, at the waistline. These two proportions according to Corbu, govern all other dimensions of the human body: for example, a man with his arm naturally upraised creates another Modular proportion, the distance between his head and his waist being in the proper relation to the distance between his head and his fingertips. Starting with this interlocking system of proportions – fingertips to head to waistline to the soles of feet – Corbu developed a gradually diminishing scale of proportionate dimensions (Blake 1966:138).*

DEFINING A MODULE

The typical shoulder width of a man is derived from Neuferts Architects Data

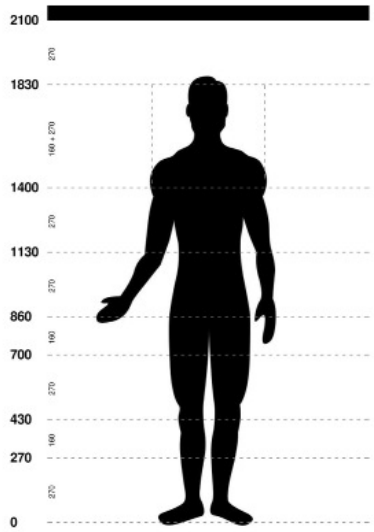


Figure 110.
Le Corbusier's Modular

The image shows a man of 1830 Height in accordance with Le Corbusier's modular. The Horizontal lines show how this modular relates to the human form.

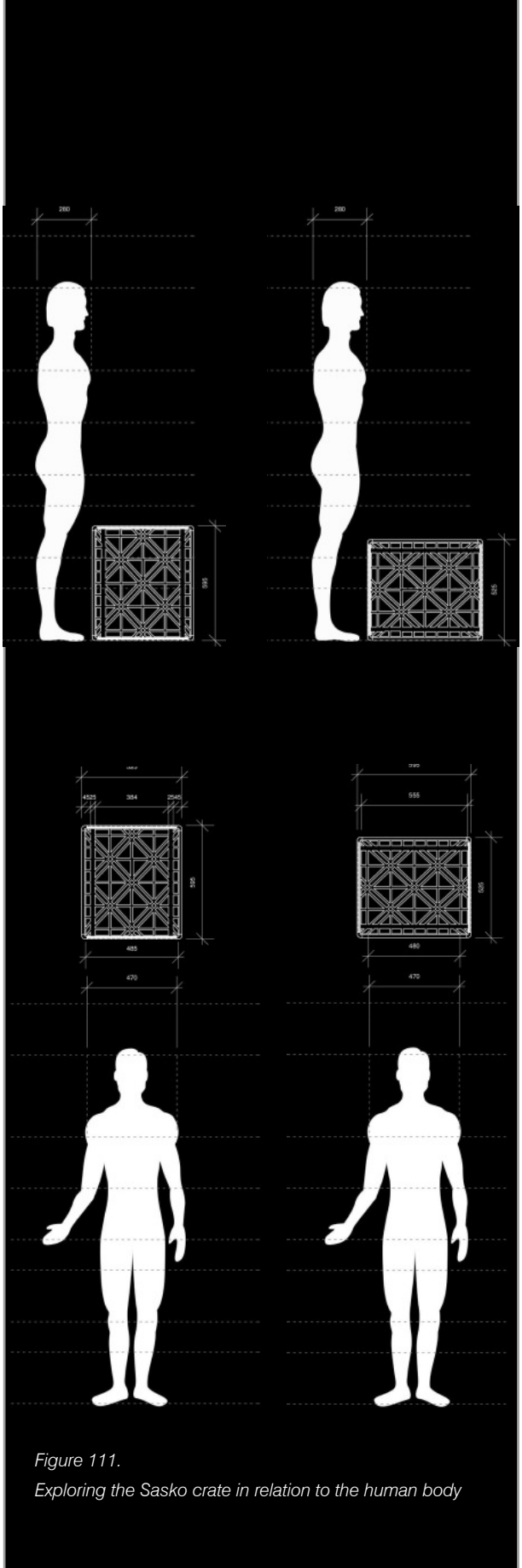


Figure 111.
Exploring the Sasko crate in relation to the human body

TYPE 01

Figure 112.
Typical trader Type 1

Trader type 1 commutes the metropolitan area and is likely to occupy several habitats throughout the day. It is possible that this will be done for a longer period than the time spent at home or in a single 'place'. Thus trader type 1's habitation is the body and therefore requires an infrastructure that mediates the built environment and his/her immediate needs. This type interprets fashion as a moving form that encloses and protects this urban nomad.

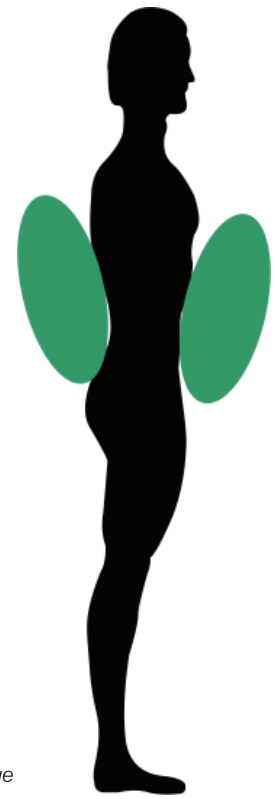
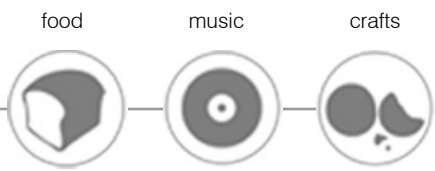


Figure 113.
Trader Type 1 storage

REQUIREMENTS

- On body compact storage of all goods
- Storage doubles as display
- Identity
- Open able compartments



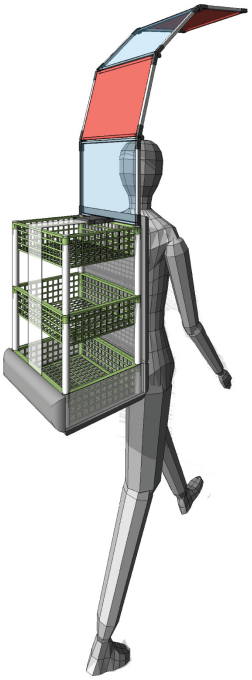


Figure 114.
Trader Type 1 storage exploration

Figure 116.
Exploring Type 1 storage as a zip-up bag

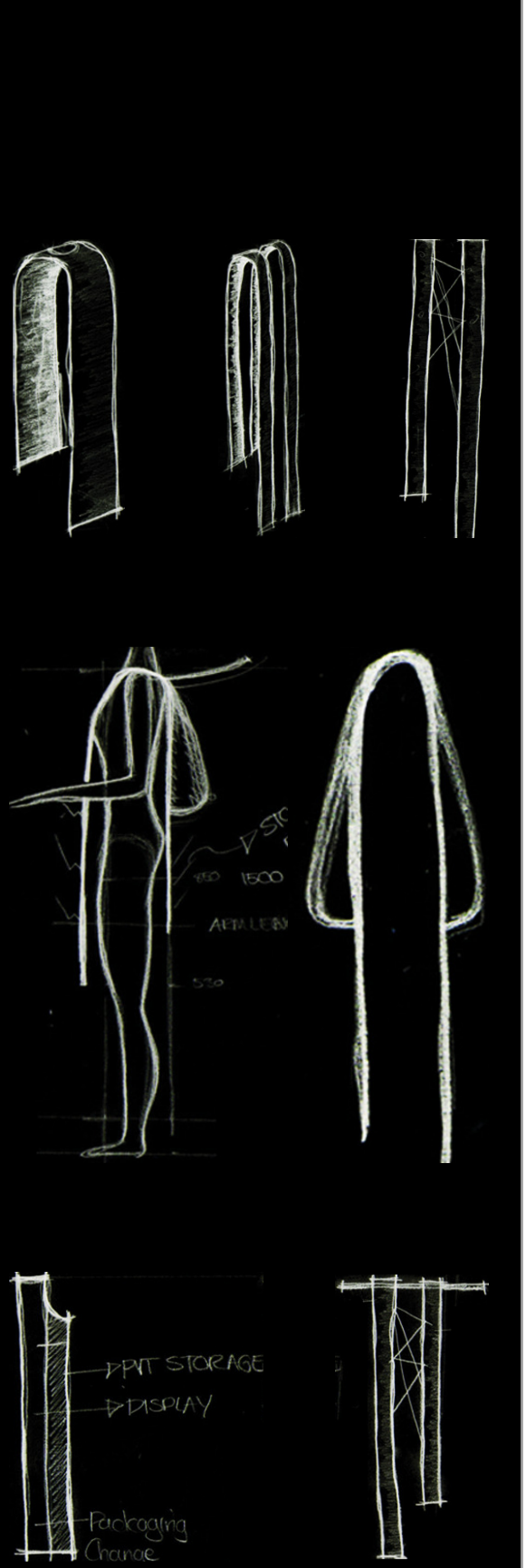


Figure 115.
Trader Type 1 concept sketches

"Moving elements in a city, and in particular the people and their activities, are as important as the stationary physical parts. We are not simply observers of this spectacle, but are ourselves a part of it, on the stage with the other participants...Nearly every sense is in operation, and the image is the composite of them all." Lynch 1992:2

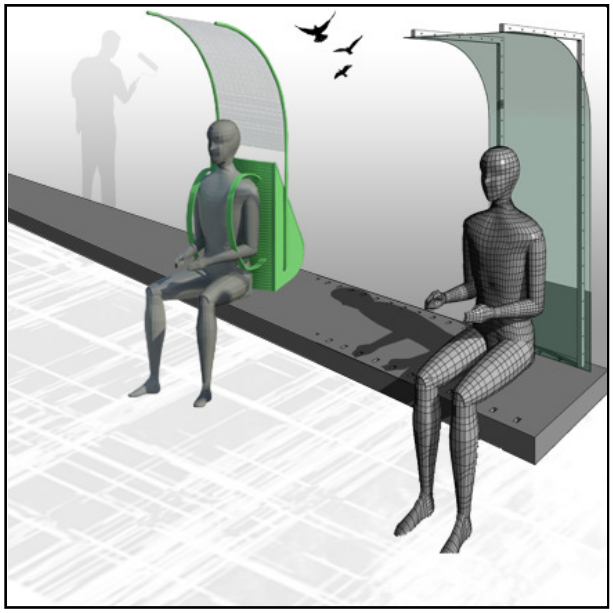


Figure 117.
Type 1 claiming space on bench

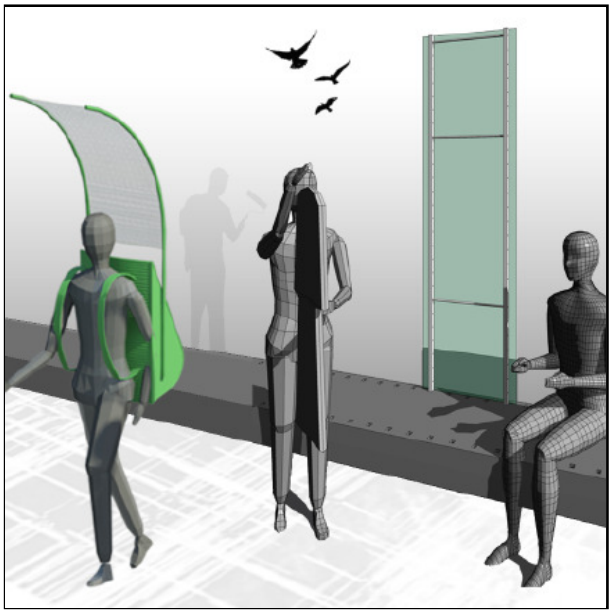


Figure 118.
Type 1 shading device as vertical display unit and post

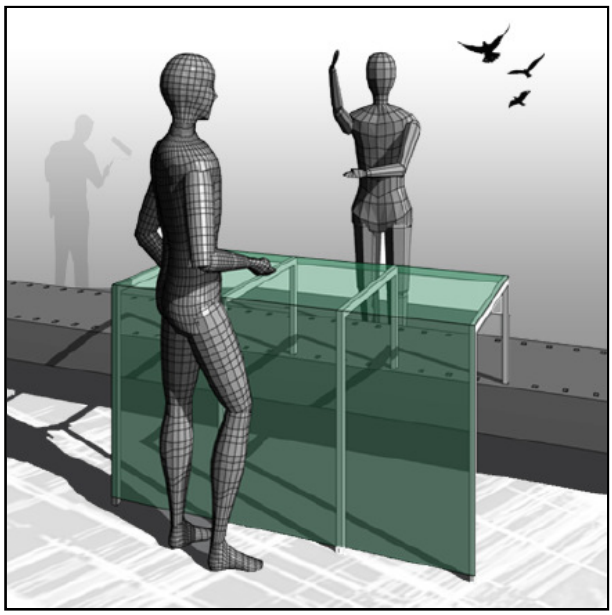


Figure 119.
Type 1 shading device as selling surface

Figure 120.
Type 1 Storage

Figure 121.
Type 1 shading device defining a realm of space for customer and trader

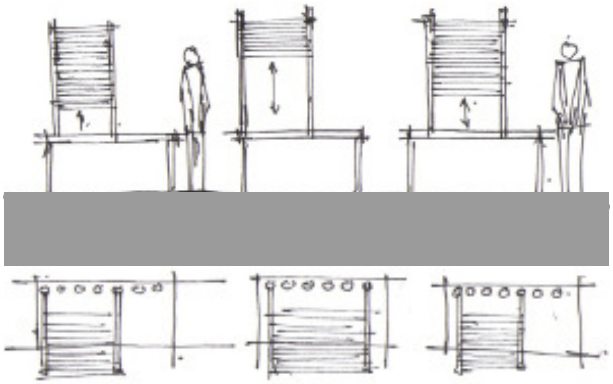
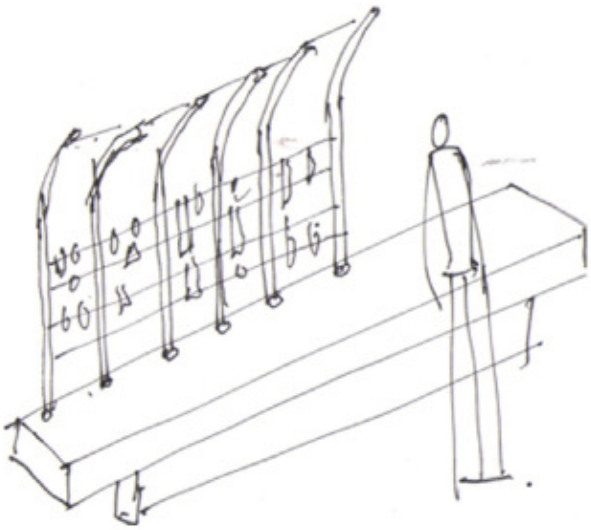


Figure 122.
Conceptual plan and elevation of Type 1 on bench



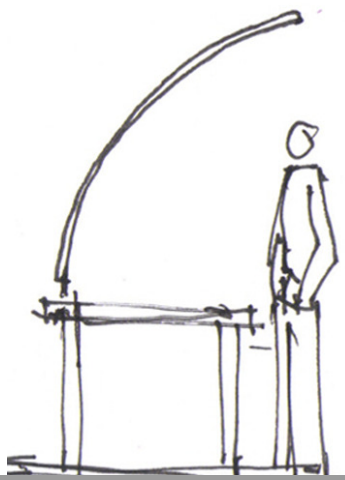


Figure 123.
Type 1 shading device in series

TYPE 02

Trader Type 2s assemble themselves and their possessions according to their own interpretations using available materials and resources in a form of collage. According to Rowe and Koetter (1996:290) collage accommodates both a hybrid display and the requirements of self determination. Collage acknowledges the leftovers of the world, preserves their integrity and gives them dignity. These claimed objects gain a new impact from their changed context, recycling use and meaning.

Traders Type 2s commonly use crates and boxes from established companies in order to display, store their goods and support selling surfaces. Typically, multiple crates are used in modular system to support surfaces as well as to vary the selling surface area and height. At times up to eight crates are used by a single trader whilst only two are used for display. As a result the trader requires assistance to carry all the components from the storage area. Fewer crates could be used to achieve the same end, whilst still allowing for a number of display configurations.

MULTIPLE CONFIGURATIONS

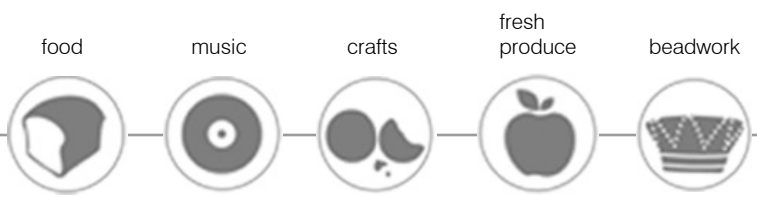
Figure 124.
Typical trader Type 2

This would add value particularly when the trader must move to a different location within the same day.

REQUIREMENTS

- Multiple configurations
- Height of selling unit must respond to site characteristics and the needs of the user
- Selling unit is adjustable to the quantity as well as the types of products sold
- Lightweight unit , easily packed away and carried

ready-made limited stock



CONCEPT DEVELOPMENT

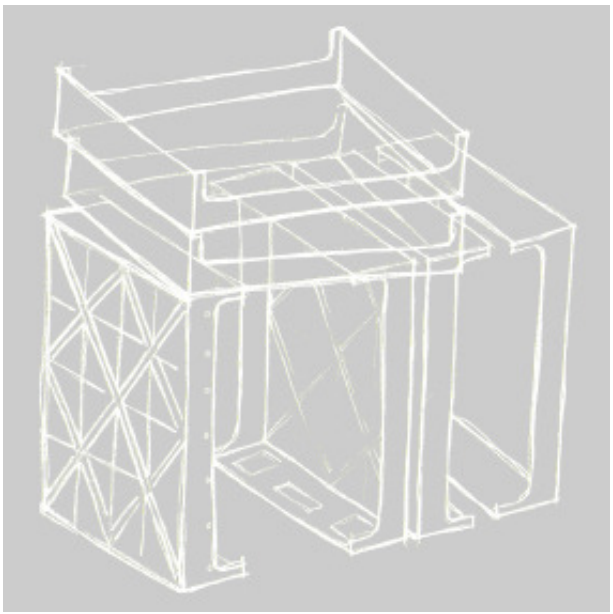


Figure 125.
Typical crate configurations

The internal structure of the crate in a horizontal position is 480mm apart. Very close the shoulder width of a man. This defines a module for the shading device used for trader type 1 as well as the supports for the trolley for trader type 2.

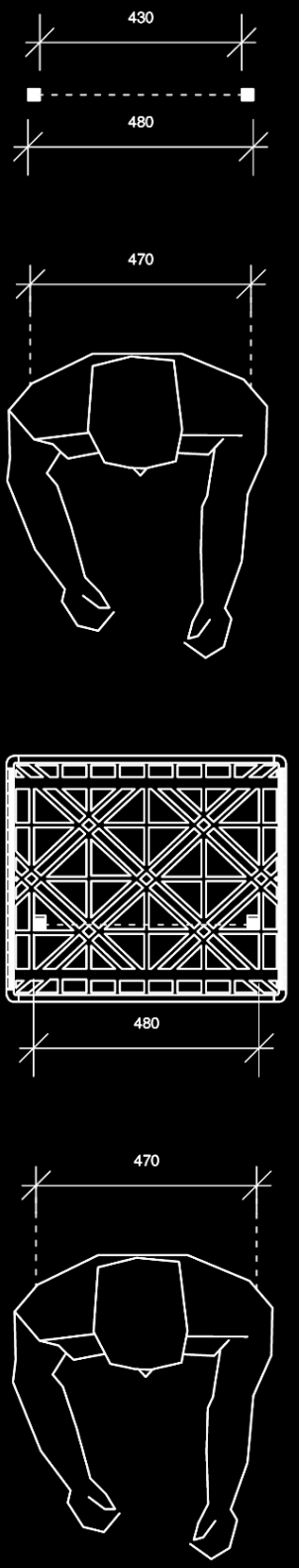


Figure 126.
Deriving a module from the internal structure of the crate

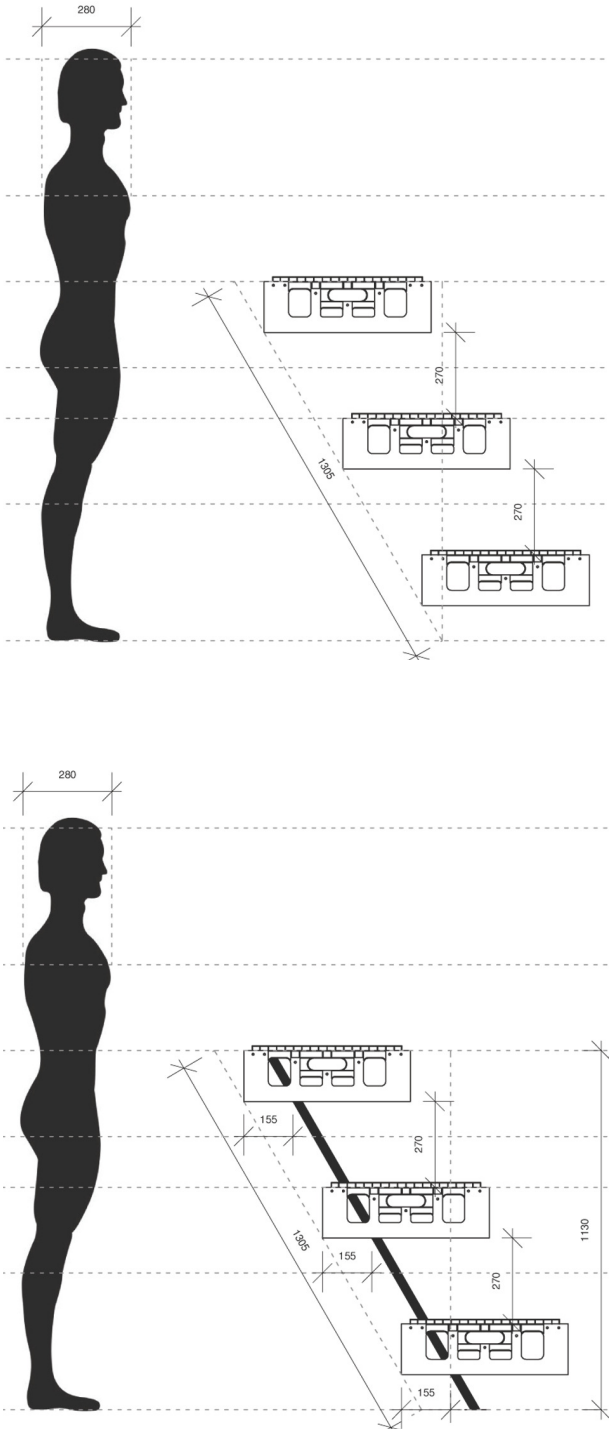


Figure 127.
Exploring crate stacking options with support

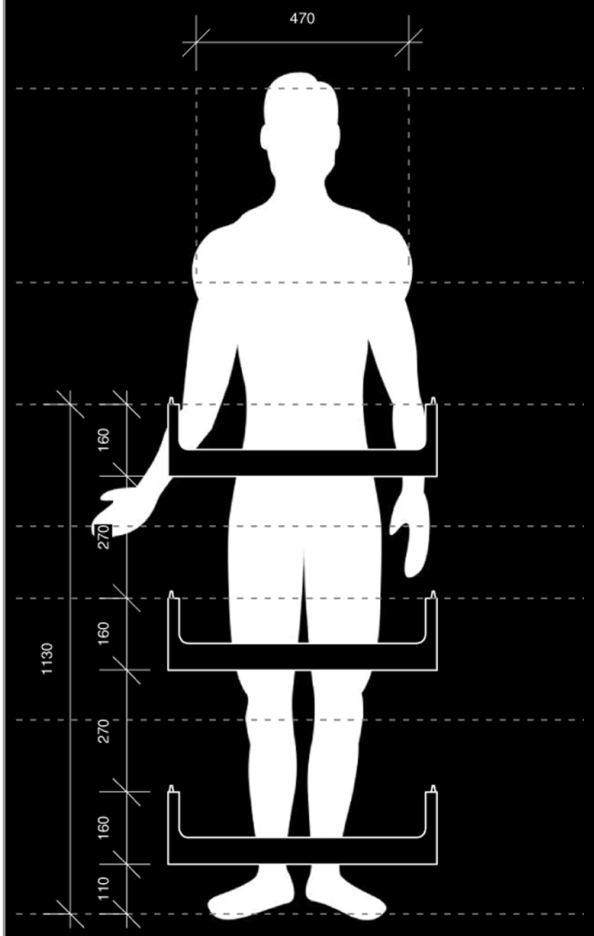


Figure 128.
Maximum crate stacking height, front elevation

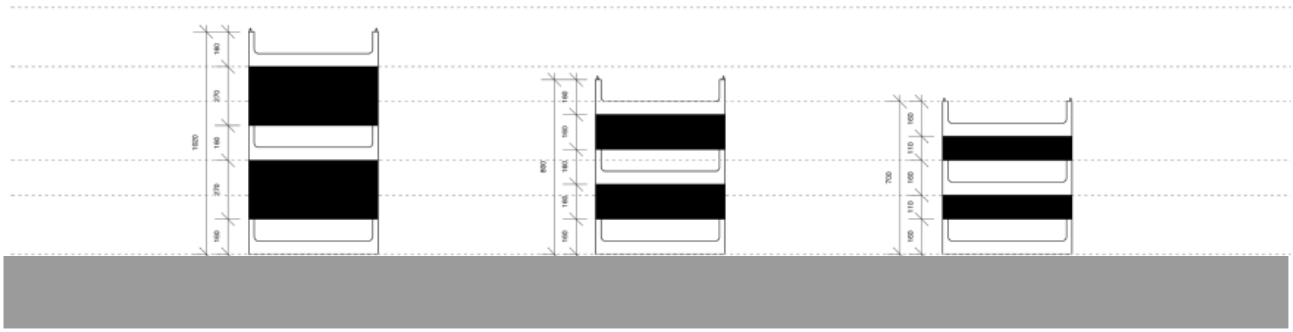


Figure 129.
Crate stacking height options

Figure 130.
Type 2 moving with crates

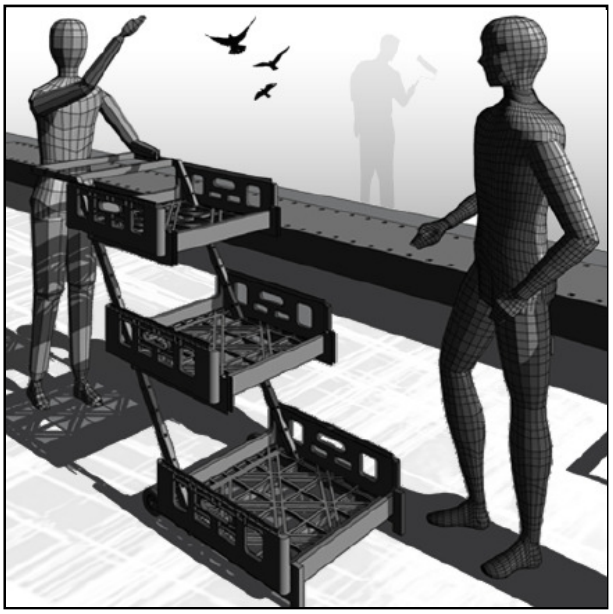
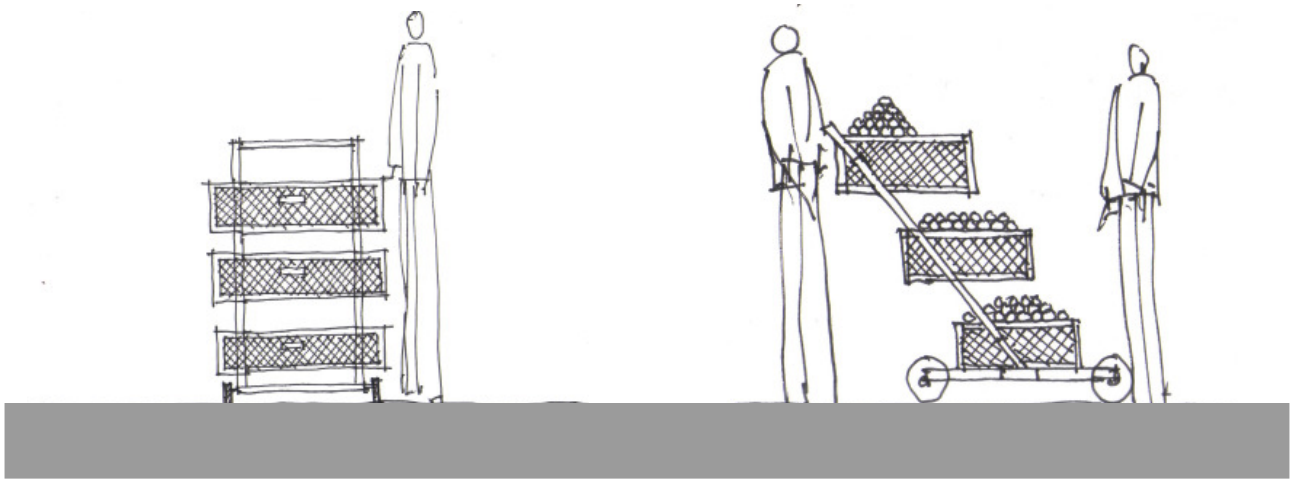


Figure 131.
Type 2 selling from crates



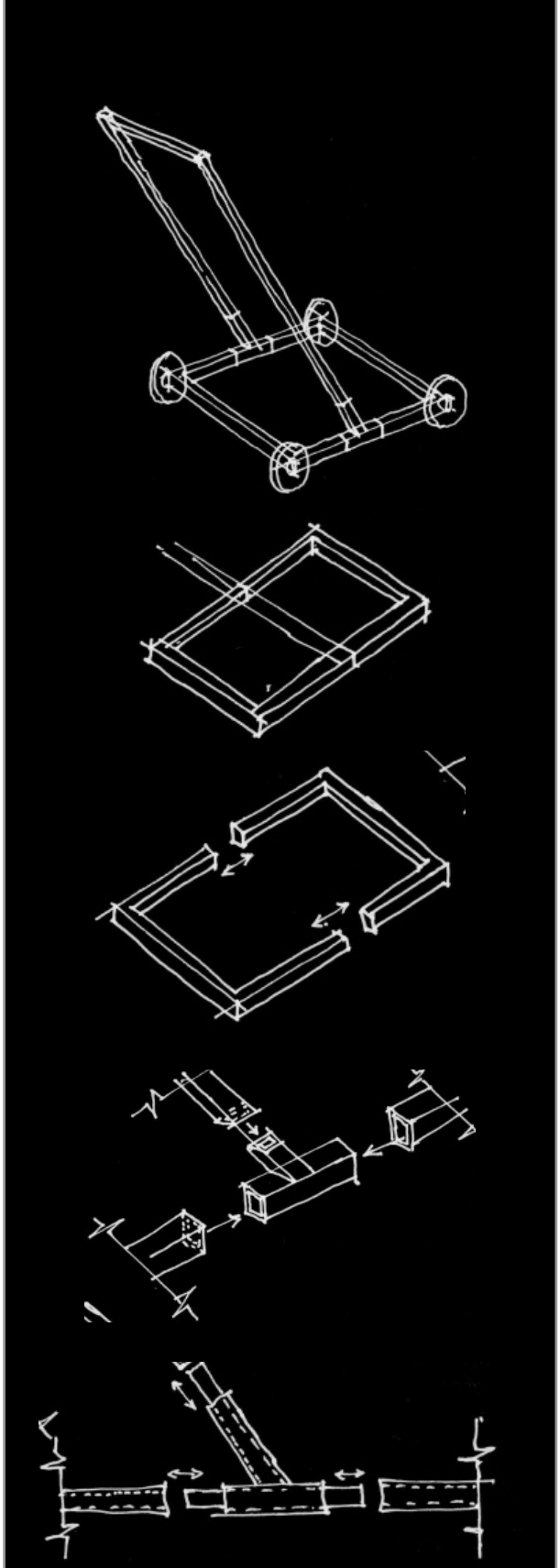


Figure 132.
Type 2 crate assembly

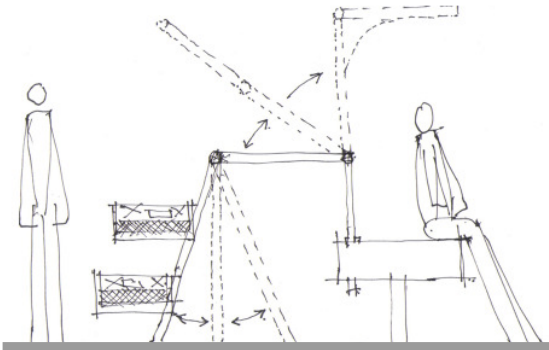


Figure 133.
Post elements used as Type 1 and 2

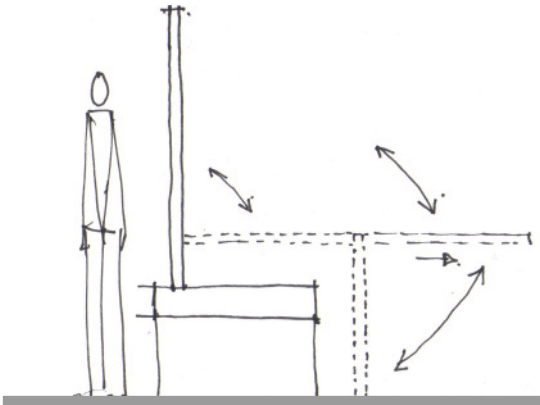


Figure 134.
Post becoming structure for surface

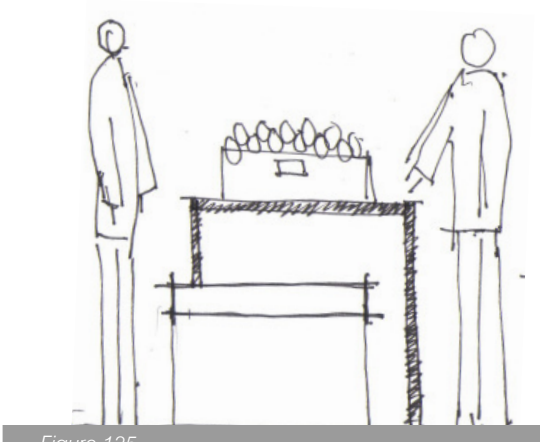


Figure 135.
Post structure as selling surface

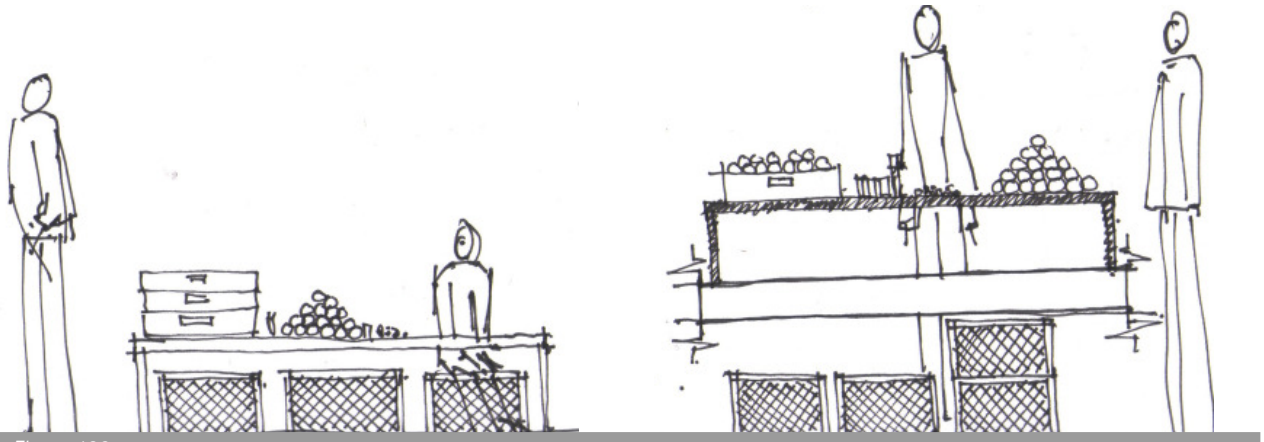


Figure 136.
Post elements as horizontal selling surface

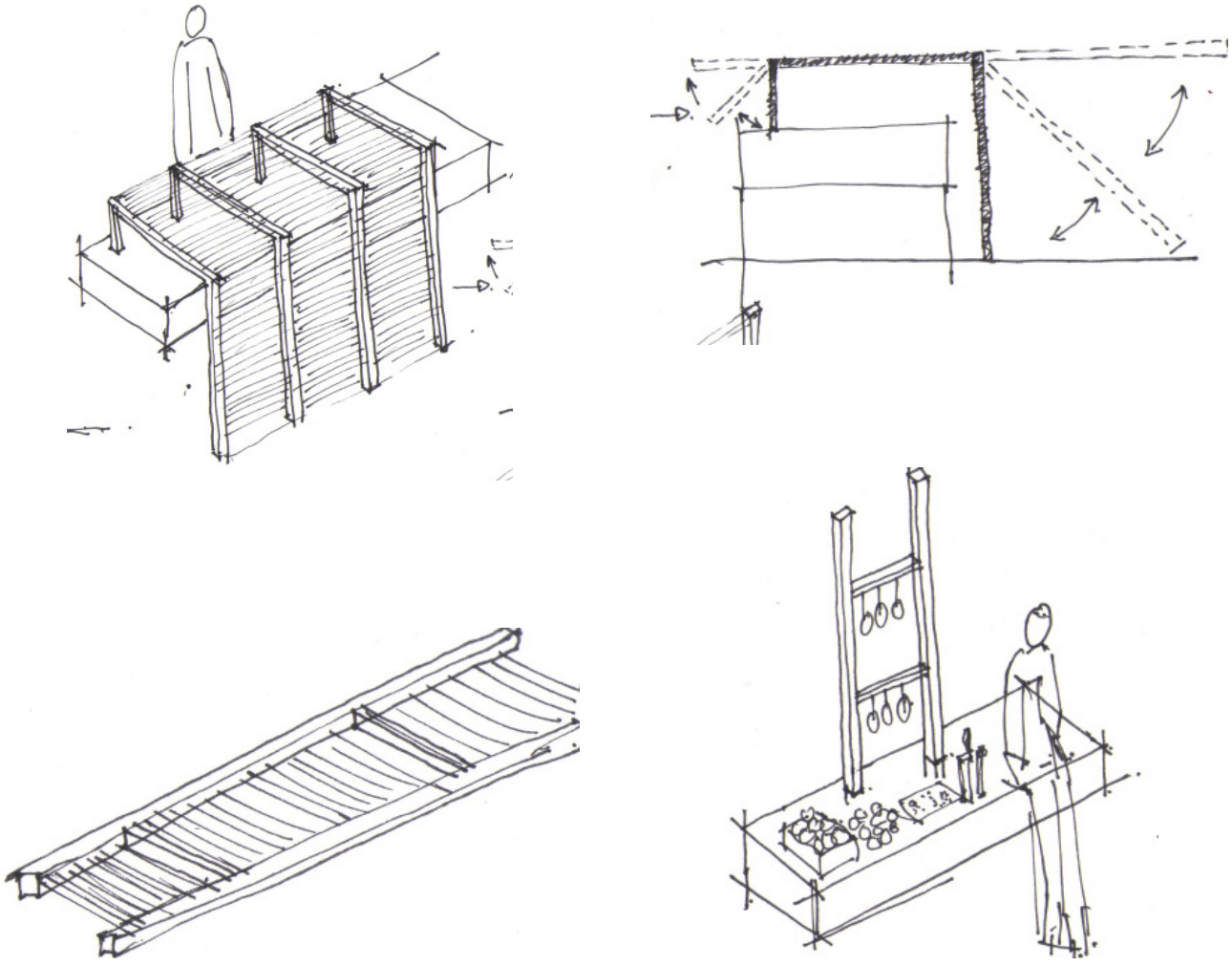


Figure 137.
Post element options

TYPE 03

COMPACT SOLUTION

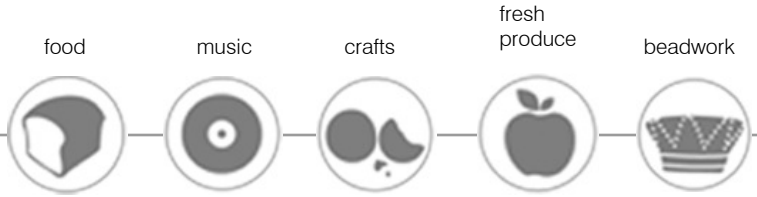
Figure 138.
Typical trader Type 3

Trading space for trader type 3 is allocated by the local municipality. Upon applying for a licence, traders await approval from the municipality as to where they may trade. This trader type typically uses the gazebo tent which is available from the Job shop in the city centre and the Army shop in Pretoria West at R1000 or more. The marquee tent defines a volume of space with four vertical elements.

REQUIREMENTS

- Compact storage solution
- Shading erected daily
- Post element to aid in day to day functioning
- Demarcated selling area

wide range ready-made stock



CONCEPT DEVELOPMENT

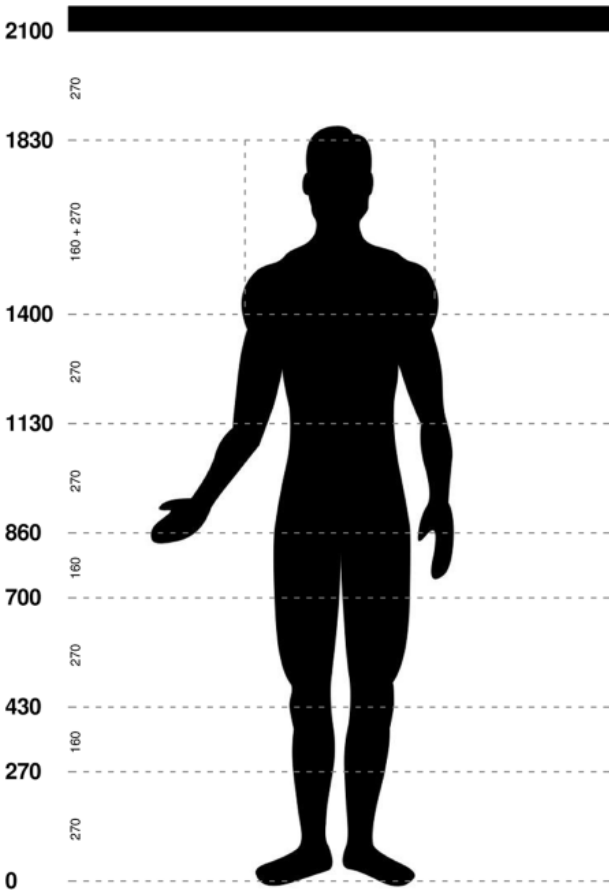


Figure 139.
Le Corbusier's Modular

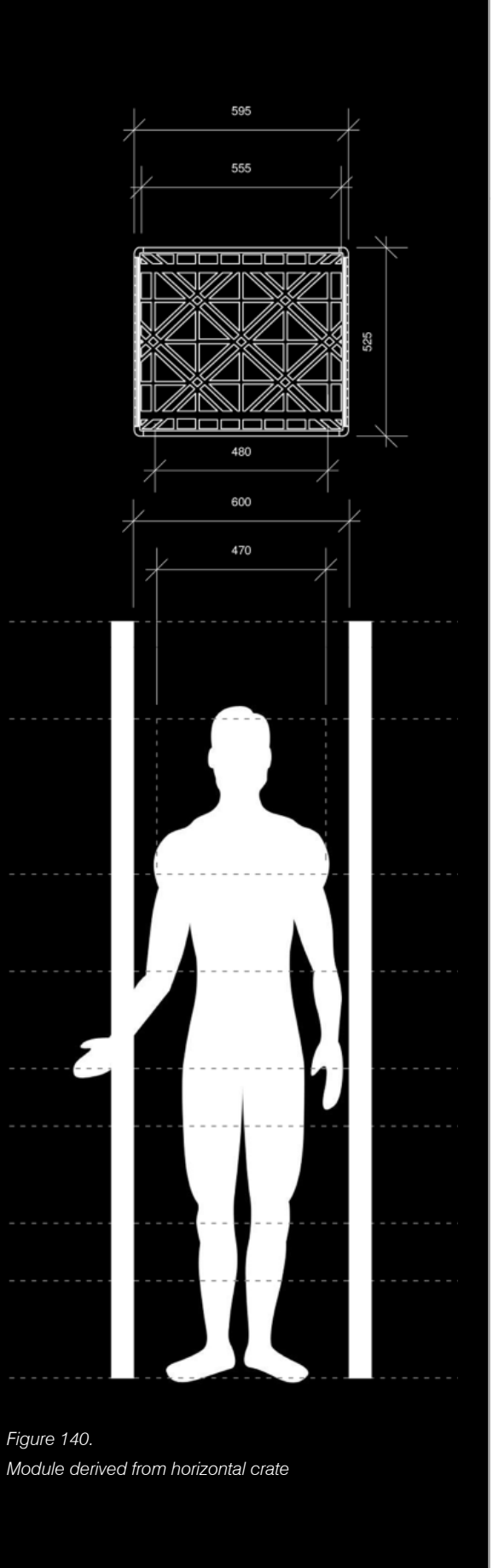


Figure 140.
Module derived from horizontal crate

barbering

clothing

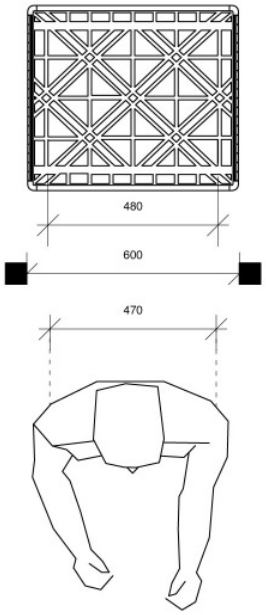


Figure 141.
Higher order trader Post elements, width of post elements protects back of trader.

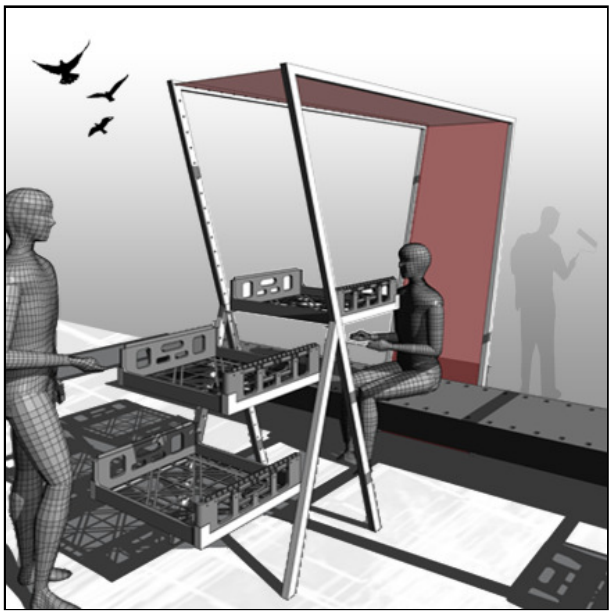


Figure 142.
Developing trader Type 3

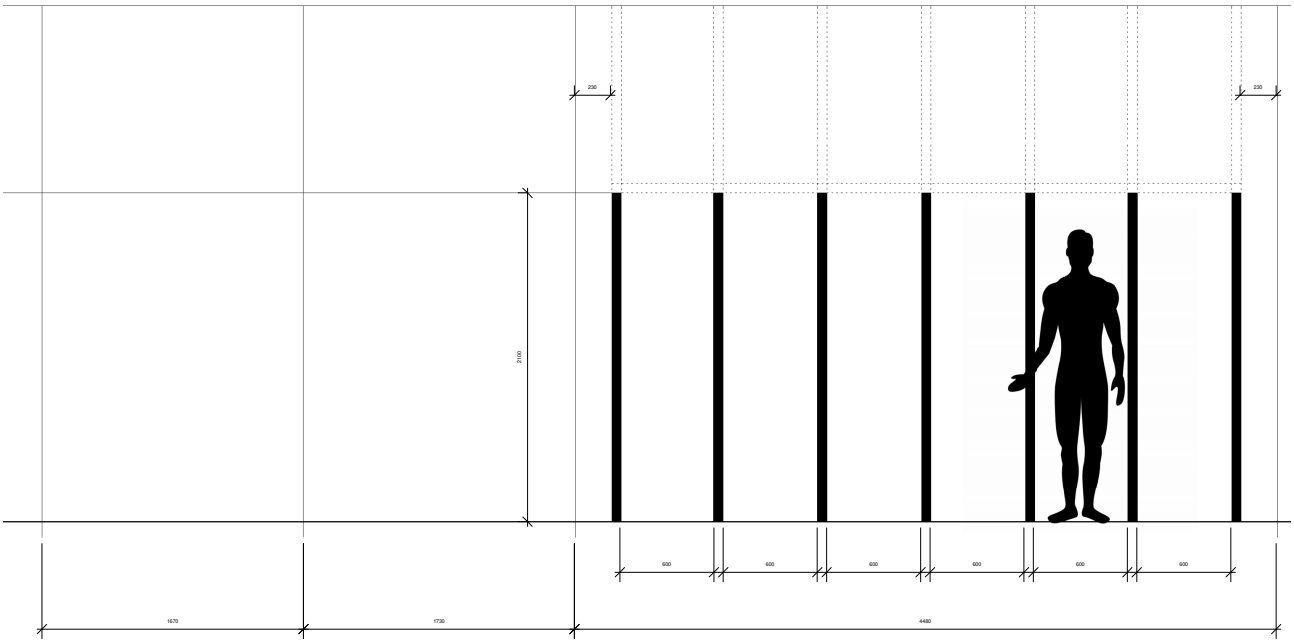


Figure 143.
High order traders' module in series

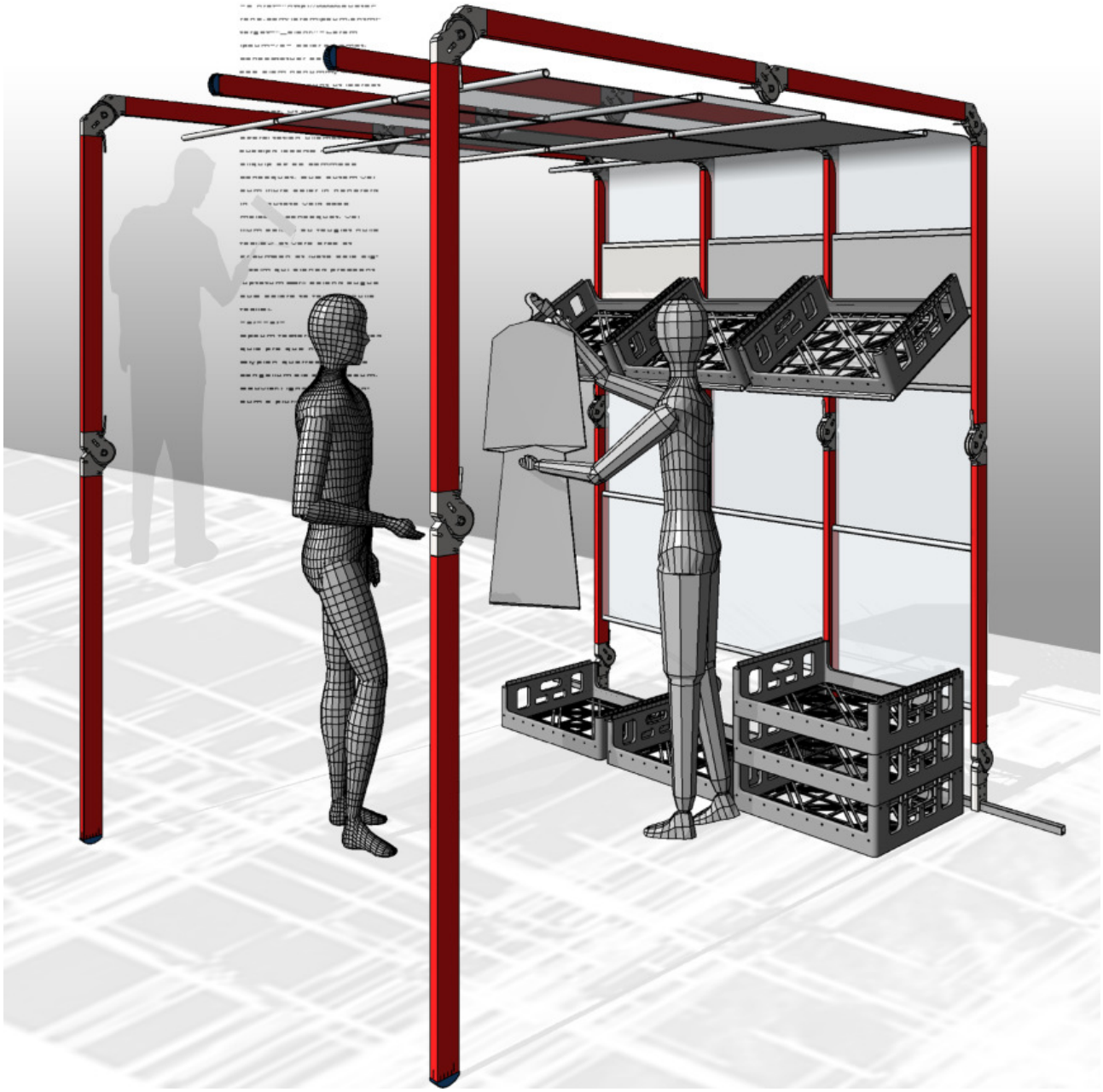


Figure 144.
Trader Type 3 in action

Figure 145.
High order trader Post elements as selling surface

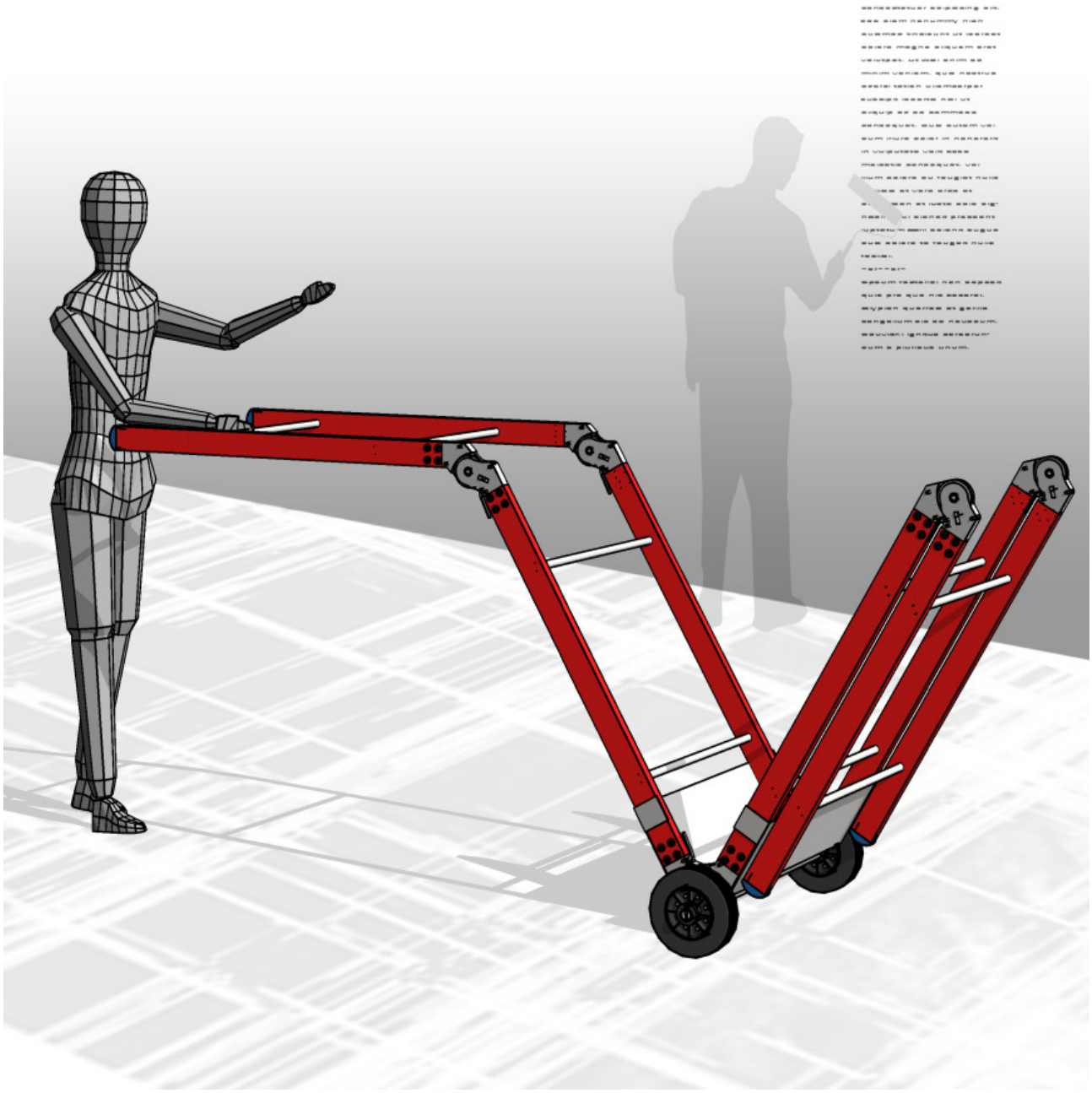


Figure 146.
High order trader Post elements as wheel-barrow

TYPE 04

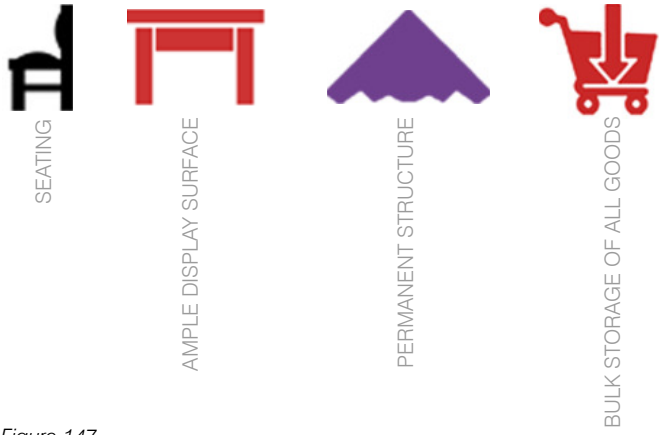


Figure 147.
Typical trader Type 4

This trader Type 4 is typified by the municipal trading stall which has permanent branding. This structure is bolted into the ground, providing traders with a fixed place from which to sell. Currently this branding represents the City of Tshwane. There is opportunity for this trading stall to have a greater impact, in a way that enhances the appearance of the entire environment. Private sector investors can be offered opportunity to advertise. Advertising income generated can be used to pay for street maintenance and trader facilities. Income can also pay for skills training programs. This will contribute to making the system self sustaining.

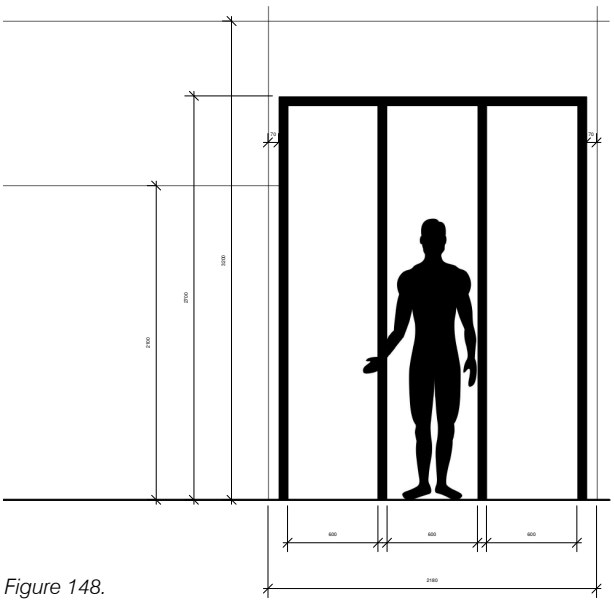
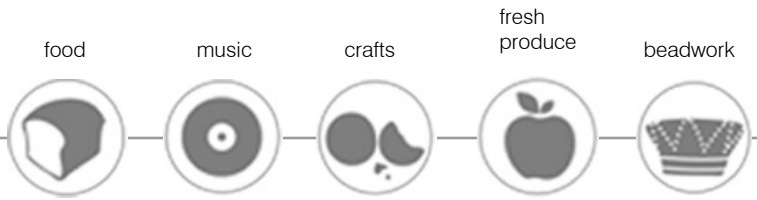


Figure 148.
Development High order Post element module for permanent branding

REQUIREMENTS

- Post element is fixed and permanent supporting branding
- Post element establishes precinct identity through branding
- On-site storage of a range of products



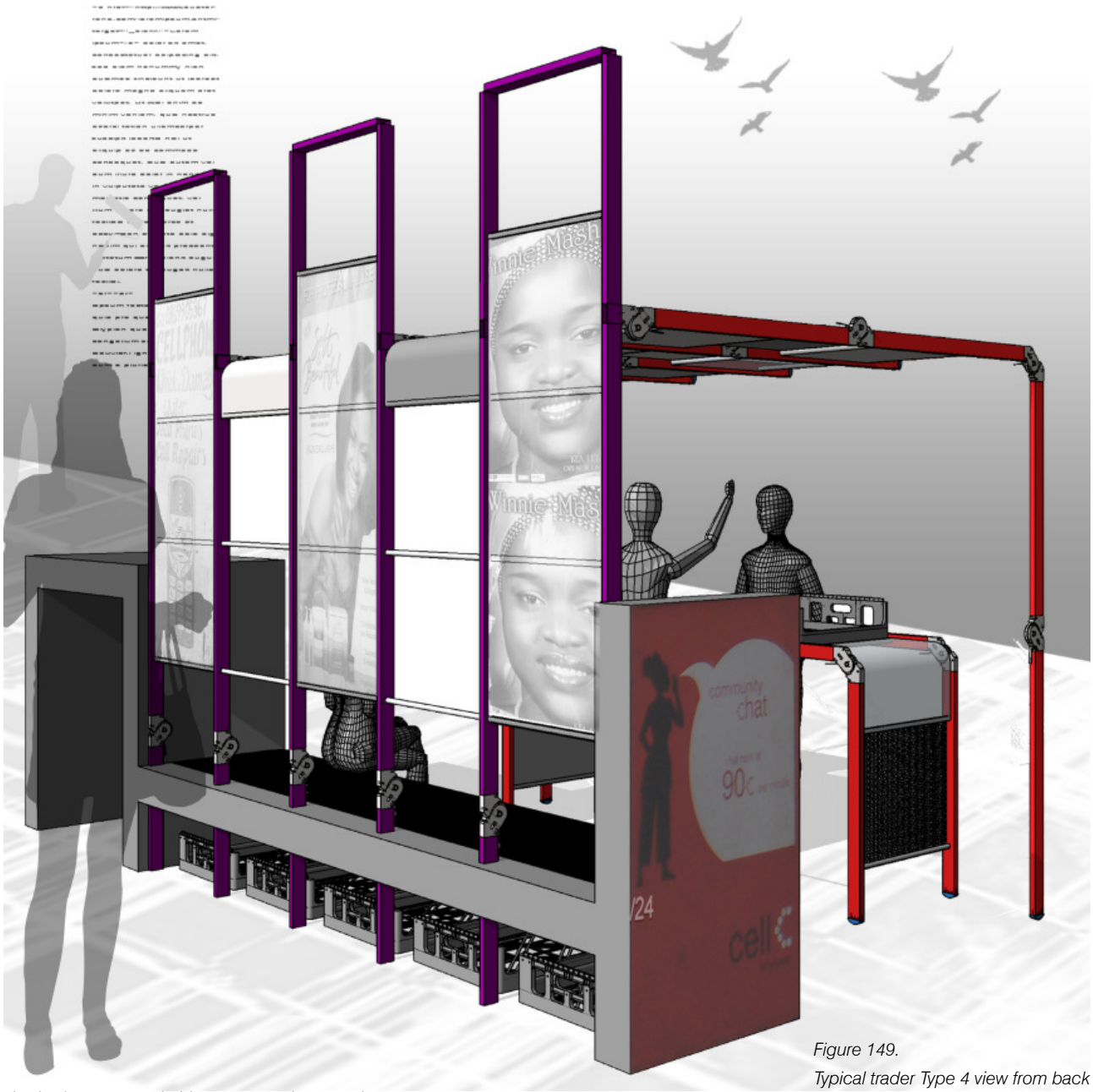


Figure 149.
Typical trader Type 4 view from back

barbering clothing shoe repair

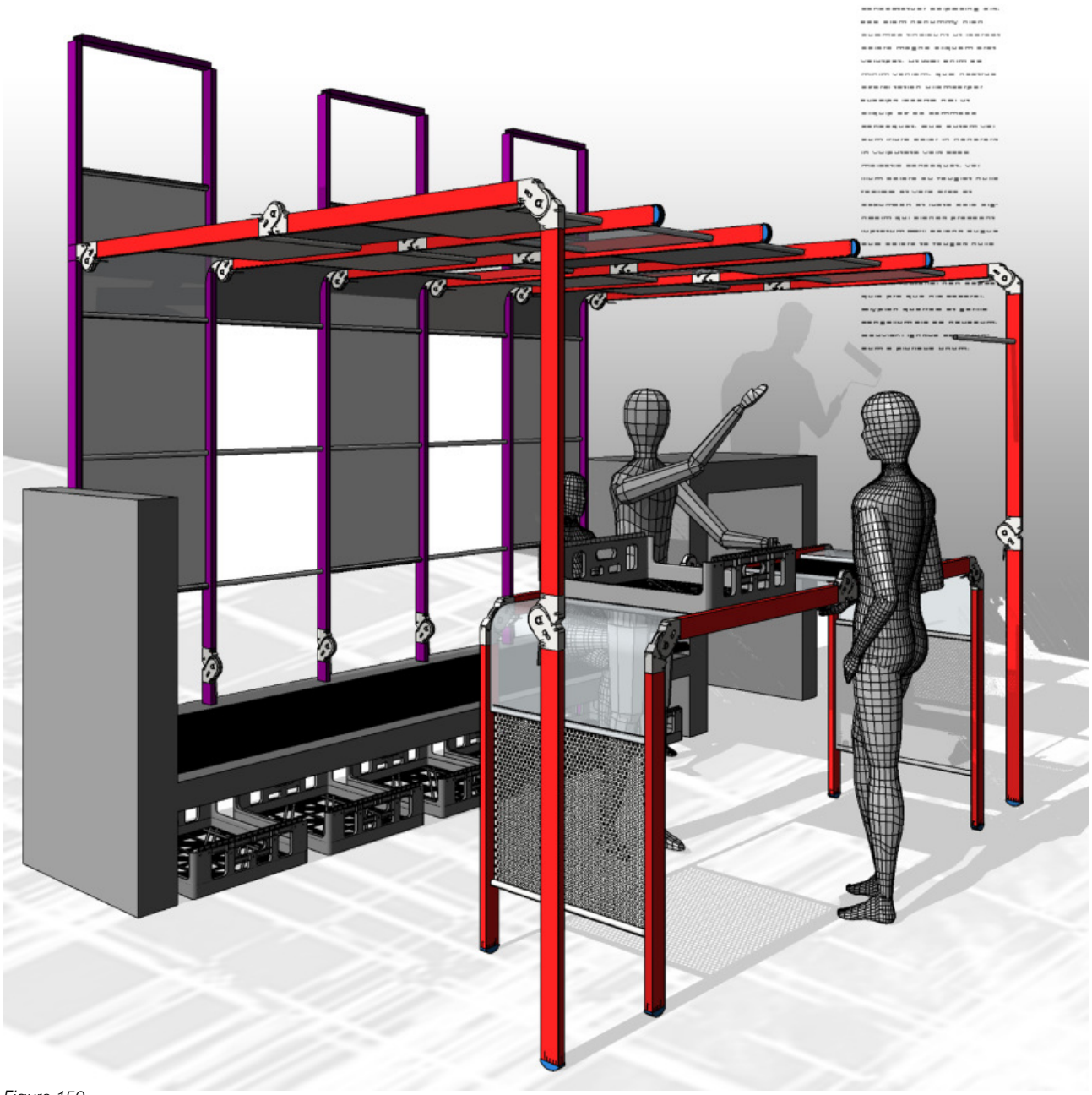


Figure 150.
Typical trader Type 4 - Type 3 post elements used

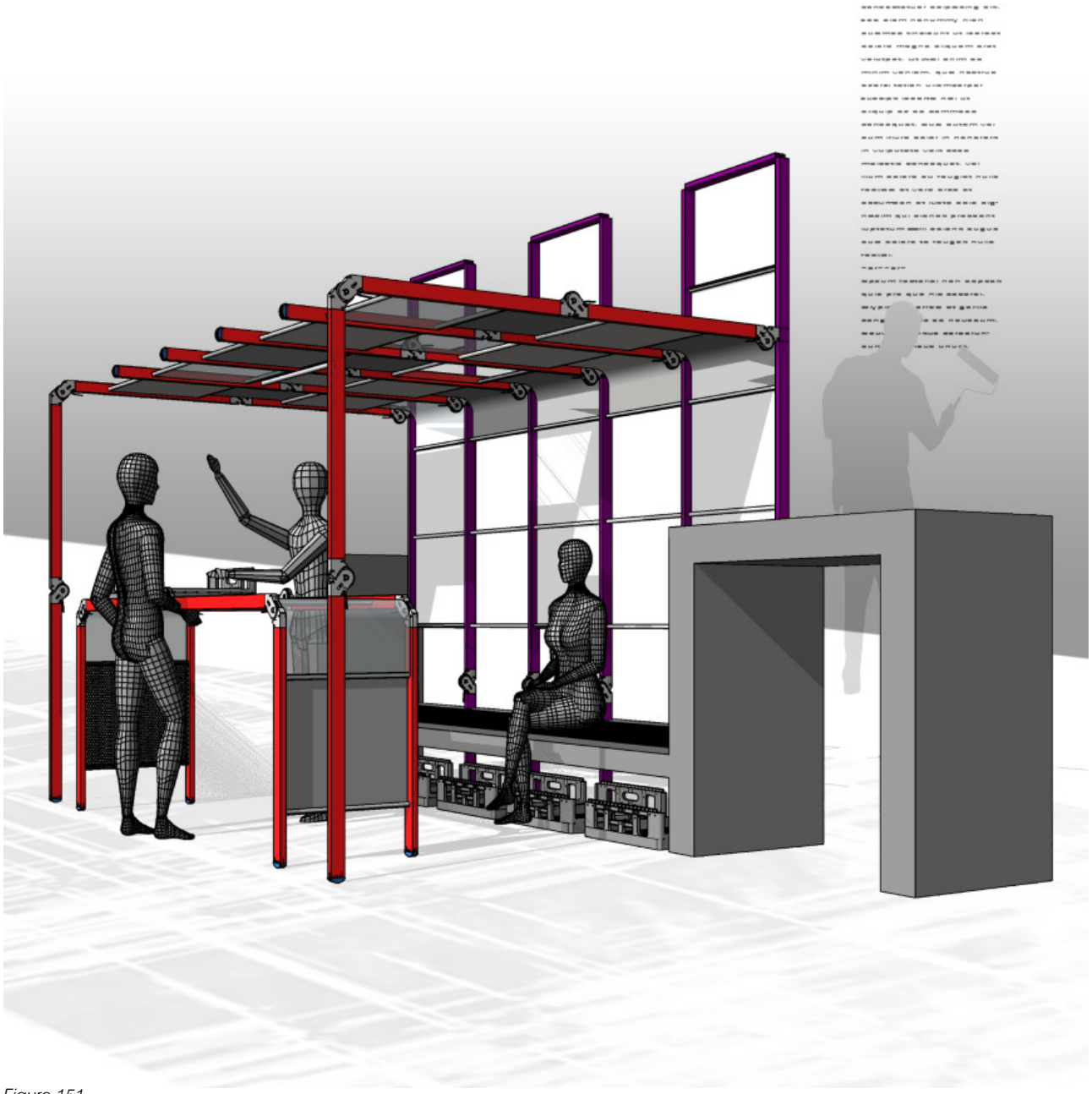


Figure 151.
Typical trader Type 4 in action

TYPE 05

ATTACHED TO BUILT FABRIC

Figure 152.
Typical trader Type 5

Trader Type five is the most dependent on built environment infrastructure for its functioning. This trader is only a step or two removed from the formal realm. Trader Type five may progress to become a formal shop owner or choose to remain in the informal realm. The advantages of remaining in the informal realm are that this trader will be able to vary the type of merchandise sold more readily than a formal shop owner. The informal trading realm is more easily adaptable to changing market conditions and customer demands because its aim is to sell goods to commuters in appropriate quantities at convenient times of day.

REQUIREMENTS

- A fixed structure with his own services
- Fixed post elements with branding
- Ability to sublet a portion of the selling space as well as have subtypes

make and manufacture inside

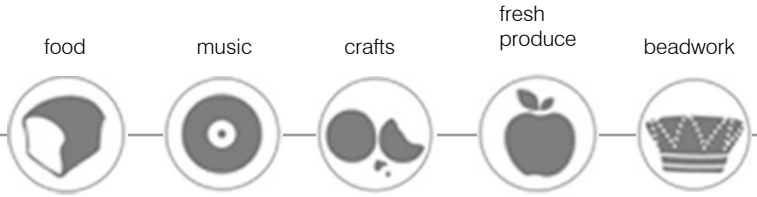


Figure 153.
Type 5 claiming a portion of the formal realm, unit closed

Figure 154.
Trader Type 5 unit open

Figure 155.
Trader Type 5 unit sub-divided

"The inhabitants explore and define their identities through the interior as they interpret their meanings for themselves, creating images that speak both to the individual who has created it and the world at large." Quinn 2003:126-127

DEVELOPING A MODULE FOR THE BENCH

Figure 156.
Developing bench height from crate height

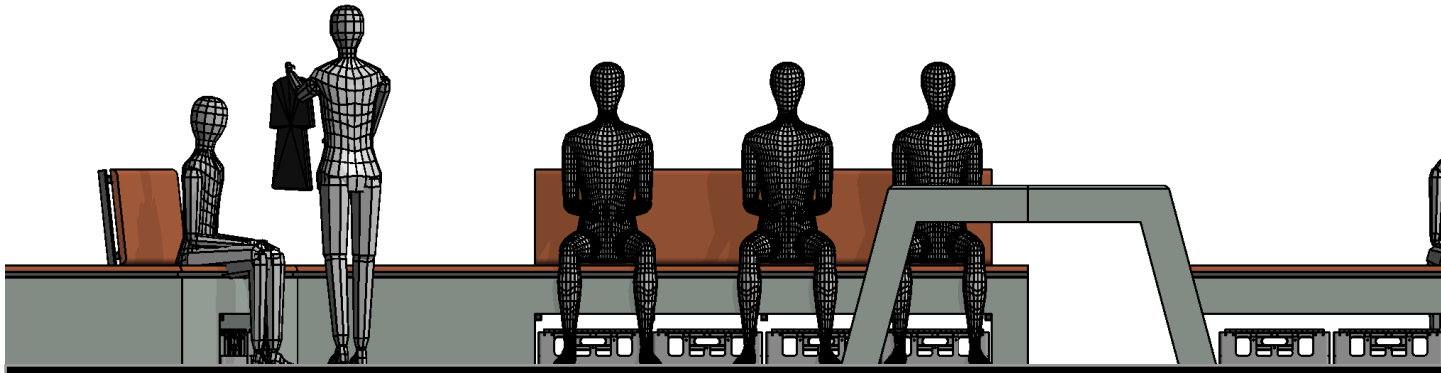


Figure 157.
Bench for a democratic street elevation

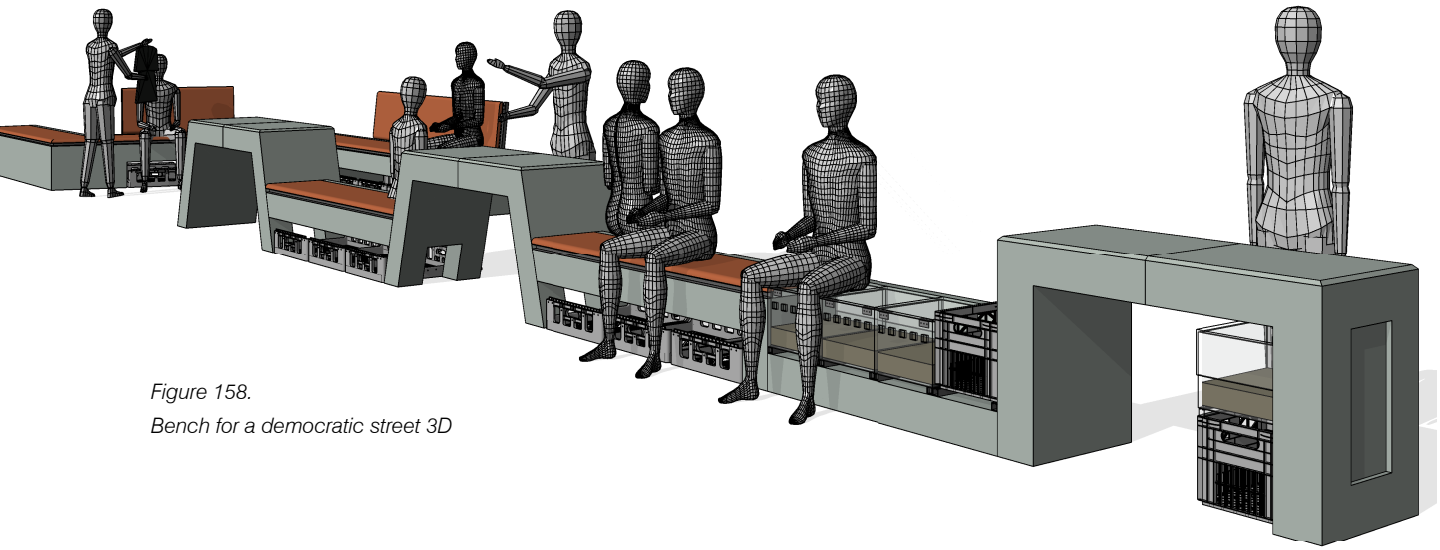
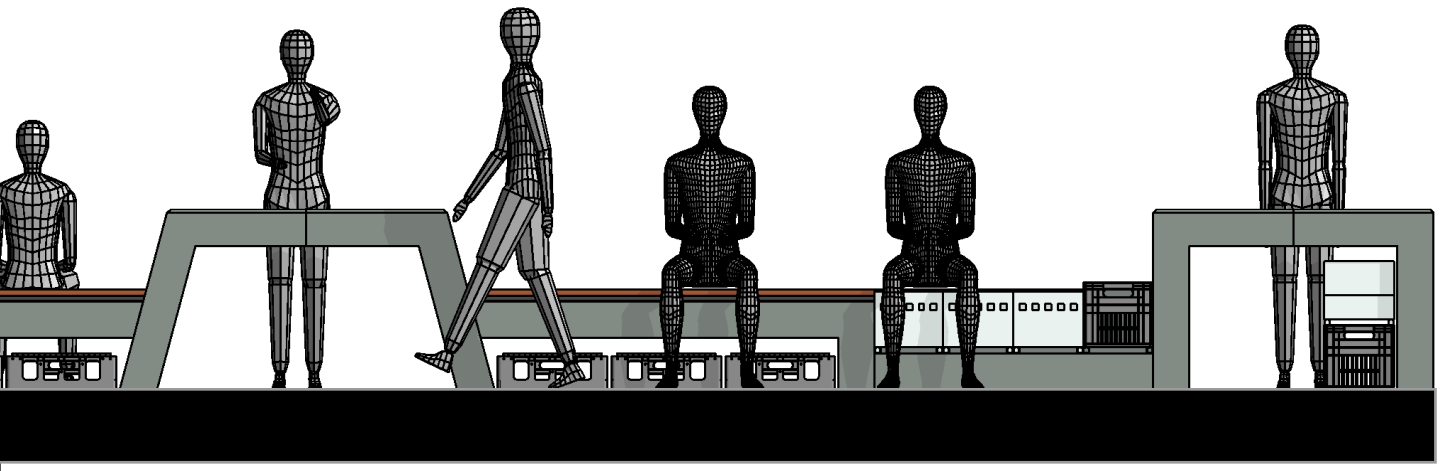


Figure 158.
Bench for a democratic street 3D




FLYING MAN

Figure 159.
Tailor

Technical report

chapter 8

TECHNICAL REPORT

TECHNICAL EXPLORATION

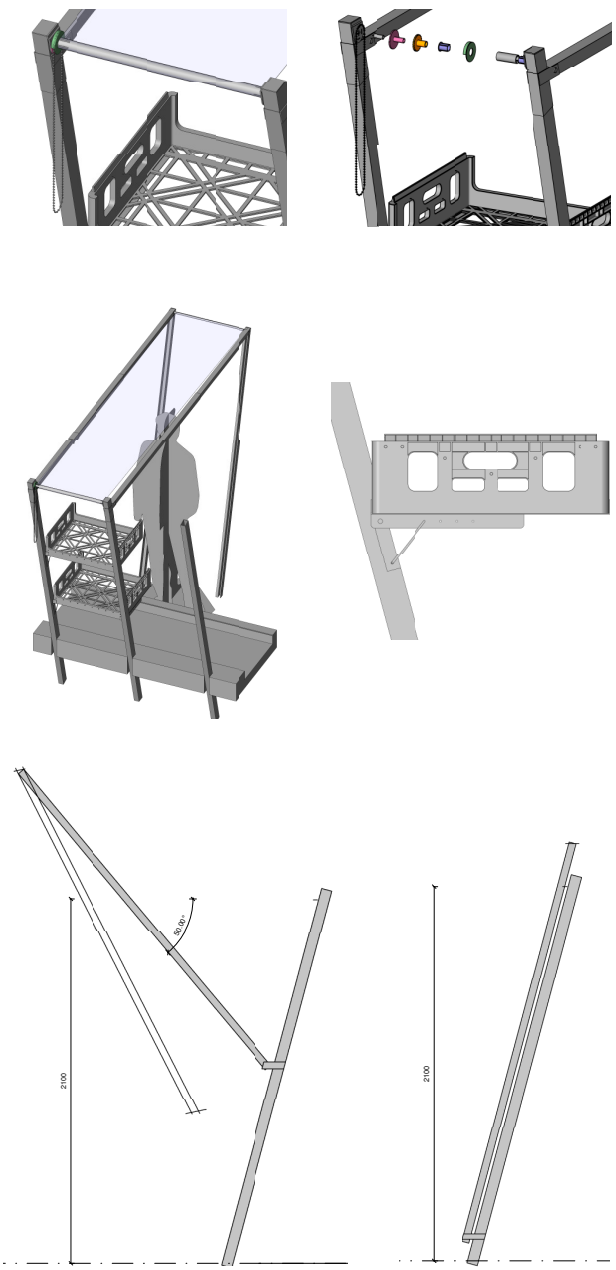


Figure 160.
Intitial exploration of the high order trader post element

A space with its own rhythms needs to act and react in response to habitation. The post elements must also be able to do so. In initial design and technical explorations, a roll up element and long elements were used. These long elements were not easily carried by a single person and did not allow for a variety of configurations.

The rollup mechanism was also problematic in that if a single component were to break, the entire system would not work.

Reducing the length of the segments allowed for a wider range of possibilities. The following images show the possible configurations when using shorter segments for the post elements.

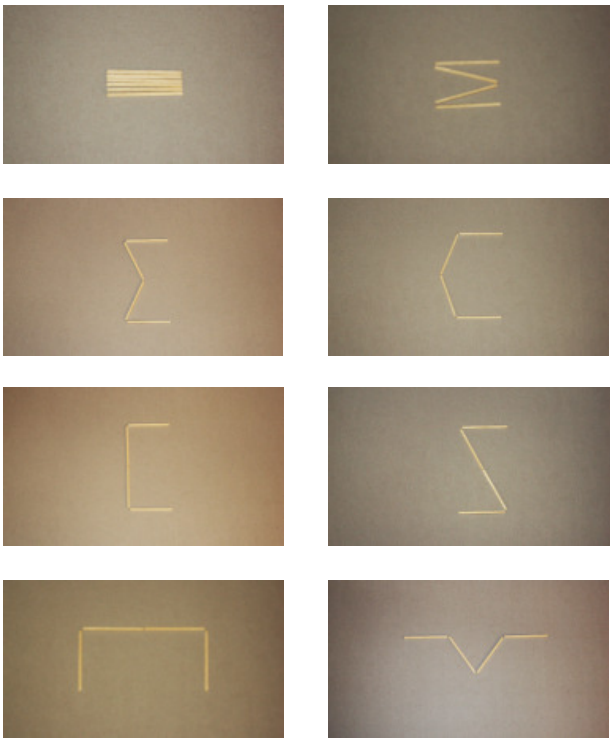
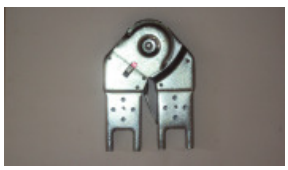


Figure 161.
Exploring possibilities of the post using shorter extrusions

The majority of elements in the proposed intervention are interchangeable and are repeatedly joined and rejoined. They are portable and used in a variety of applications thus, it was important that they be:

LIGHT, DURABLE, WEATHER RESISTANT, IMPACT RESISTANT

Figure 162.
Aluminium multi-purpose folding ladder



POST ELEMENTS

The characteristics of the following elements will be explored and compared for use as post elements.
POLYMER, METAL, POLYMER COMPOSITE, POLYMER METAL COMPOSITE PANELING

1. POLYMER

Polymer fibers are strong and stiff because during the drawing process, polymer chains are orientated along the fibre axis. The strongest polymers are polypropylene, polyethylene and aramid. The strength of these materials relative to their weight exceeds that of steel. Polymers are easily moulded to achieve complex shapes. They allow cheap manufacture of integrated components that in other materials can only be built up by expensive assembly methods and made from many parts (Ashby & Johnson 2001:180).

The following are some of the attributes of polymers:

- cheap to buy and shape
- light and flexible
- colour and freedom of shape allows flexible design
- thermoplastic polymers are recyclable and most are non toxic
- properties change rapidly even at room temperature and many creep under load, they sometimes become very brittle in very cold temperatures
- Polymers are sensitive to UV radiation thus requiring special protection
- Polymers with higher thermal stability, stiffness, strength and toughness are constantly under development (Ashby & Johnson 2001:180-181).

Polymers consist of three subgroups: thermoplastics, thermosets and elastomers. Thermoplastics and thermosets are the only two relevant to this exploration of possible materials to use for as post elements because elastomers are elastic and expand substantially in warm environments (Ashby & Johnson 2001:211)

Figure 163.
Stainless steel positive locking hinge from SA Ladder

a. Thermoplastics

Can be moulded into complex shapes

- Sensitivity to sunlight decreased by adding UV filters
- Flammability decreased by adding flame retardants
- Shrinkage increases with wall thickness and decreases with higher moulding pressures
- Most thermoplastics can be recycled.

(Ashby & Johnson 2002:177-178)

b. Thermosets

- Once shaped thermosets cannot be reshaped.
- They have greater dimensional stability than thermoplastics.
- They are highly resistant to temperature changes resulting in little to no creep
- The fluidity of some thermosets before moulding allows them to take up fine detail, and to penetrate between fibres to create composites
- Most thermosets cannot be recycled because they cannot be moulded and reshaped (Ashby & Johnson 2002:178).

CONCLUSION

Polymers are not a viable choice for use as the post elements because they are all vulnerable to damage such as creep and chemical deterioration caused by UV radiation. This is a very unfavourable property for the post elements which need to be extruded hollow sections that can be reused. It is essential that dimensional stability be maintained in the post elements because these elements function as structural elements in higher order trader types (Type 1-3).

2. POLYMER COMPOSITES

- Very stiff and strong and are usually made of continuous fibres (glass, carbon or Kevlar, an aramid) and flexible textile reinforcing fibres embedded in a thermosetting resin (polyester/epoxy)
- Fibers carry the mechanical loads, whilst the matrix material transmits loads to the fibres and provides ductility and toughness whilst protecting fibres from dangers caused by handling or the environment.
- The strength of a composite is increased by raising the fibre-resin ratio, and orientating the fibres parallel to the loading direction
- The pultrusion process which is used to make continuous shapes of constant length and cross section, compacts the material components, making the material stronger, more rigid and resistant to wear and tear (Ashby & Johnson 2002:182-183)

3. METALS:

- Stiff
- Strong and tough
- Primary production is energy intensive, aluminium requires twice as much energy per unit weight than polymers.
- Metals can be recycled, and the energy required to do so is much less than that required for primary production.
- Some are toxic, particularly the heavy metals (Ashby & Johnson 2002:184)

4. POLYMER METAL COMPOSITE - ALUPANEL

Alupanel is a composite panel which consists of a 0,3mm aluminium sheet on either side of a polyethylene core. It is a prefinished, premade product that requires no decoration. Its applications include:

- Sign Making and Out of home media
- Shop fitting and Design
- Manufacture of point of sale displays
- Trade stands and designs
- Transport
- Partitioning, Wall Linings and Suspended Ceilings
- Industrial Applications

Some of the advantages of Alupanel include (Multipanel UK LTD. 2007):

- no colour fade in comparison to some plastic products
- dimensionally stable and does not expand and contract under extreme temperature
- a wide range of colours and finishes are available
- rigid and lightweight
- five year product guarantee
- smooth flat surface
- easily cut, folded and formed
- can be finished in a variety of ways, including the application of vinyl, screen printing, digital printing as well as paint

CONCLUSION

Alupanel has some disadvantages in that the components are put together with adhesive. Therefore it is not likely that this product will be able maintain its appearance with constant abrasion, impact, assembly and disassembly in the street trading environment. This may be challenging in the long term as the trader's components are subject to constant use and must be hardwearing and durable.

The following table is a comparison of the rigidity vs weight of the traditionally used structural materials, steel and aluminium with polymer composite fibreglass.

Based on the material exploration conducted, it seems that polymer composite fibreglass compares favourably with metals which are usually selected for use as structural components due their rigidity and durability. However fibreglass has a slightly more favourable strength to weight ratio. The following is a comparison of the material characteristics of fibreglass vs traditional structural materials (aluminium and steel).

Fibreglass vs traditional materials			
	Fibreglass	**Aluminium**	**Steel**
Corrosion resistance	High	Medium	Low
Strength	High	High	High
Weight	Low	Low	High
Electrical Conductivity	Low	High	High
Thermal conductivity	Very low	High	High
EMI/RFI Transparency	Yes	No	No
Ease of Fabrication	Easy	Moderate	Easy
Life cycle cost	Low	Moderate	Moderate
Environmental impact	Low	High	High

Table A. Fibreglass vs traditional materials

CORROSION RESISTANCE

FIBREGLASS

- Fibreglass is corrosion resistant to a broad range of chemicals.
- In applications where metals corrode, fibreglass products endure a long life span with very little maintenance.

STEEL

- Steel is subject to oxidation and corrosion and requires painting or galvanizing for many applications.

ALUMINIUM

- Can cause galvanic corrosion particularly when steel connections are used in the presence of water.
- Corrosion resistance for aluminium is increased by anodizing or application of coatings.

STRENGTH

FIBREGLASS

- Pultruded fibreglass structural shapes have a strength-to-weight ratio, greater than that of steel in the lengthwise direction
- These pultruded fibreglass shapes do not permanently deform under impact.

STEEL

- Being a homogeneous material, it can deform permanently under impact.

ALUMINIUM

- Being a homogeneous material, it can deform permanently under impact.

WEIGHT

FIBREGLASS

- It is light weight - on an equal volume basis, pultruded fibreglass weighs only 25% of the weight of steel and 70% of the weight of aluminium.

STEEL

- Steel components are heavier than Fibreglass and Aluminium.

ALUMINIUM

- Aluminium is lighter than steel but it heavier than Fibreglass.

ELECTRICAL CONDUCTIVITY

FIBREGLASS

- Has low electrical conductivity

STEEL

- Steel conducts electricity and can be a potential shock hazard during cold dry winter months

ALUMINIUM

- Aluminium conducts electricity and can be a potential shock hazard during cold dry winter months

THERMAL CONDUCTIVITY

FIBREGLASS

- Fibreglass has low thermal conductivity; this can be a safety feature. For example, if one part of a fiberglass structure is extremely hot, individuals who touch the structure away from the heat source will not get burned. It will not gain heat in extremely hot temperatures.

STEEL

- Steel is thermally conductive.

ALUMINIUM

- Aluminium is thermally conductive.

EASE OF FABRICATION

FIBREGLASS

- Fibreglass can be fabricated in a non specialized environment using simple carpenter tools with carbide or diamond tip blades
- torches and welding equipment are not required

STEEL

- Steel fabrication requires cutting torches

ALUMINIUM

- Aluminium fabrication requires more skilled workers than those required to fabricate Fibreglass or aluminium

LIFE CYCLE COST

FIBREGLASS

- Fibreglass has a long life expectancy that is virtually maintenance free.
- The pigments added to the resin provide colour throughout lifespan requiring no painting maintenance.

STEEL

- Lower initial cost however maintenance costs lead to higher lifecycle costs.

ALUMINIUM

- Has a low initial cost because tooling is relatively inexpensive compared to fibreglass and steel

ENVIRONMENTAL IMPACT

FIBREGLASS

- Compared to steel and aluminium, the manufacture of fibreglass produces fewer air and water emissions, consumes less energy and emits less greenhouse gas.
- Producing fibreglass products results in a lower environmental impact than the production of steel or aluminium.

STEEL

- The production of steel consumes more energy and produces more greenhouse effects than the production of fibreglass

ALUMINIUM

- The production of aluminium consumes more energy and produces more greenhouse effects than fibreglass

CONCLUSION

The comparative study between fibreglass, steel and aluminium revealed fibreglass as a more favourable material for use as post elements. Compared to steel and aluminium it is a lighter more environmentally friendly material. Its impact resistant properties make it favourable to use for both low and high order trader types. The ease of fabrication means that components will be able to be cut to accommodate to traders needs, enabling them to create new instances within the system. Its excellent durability properties make it ideal for use within the system. The same components can be sold and resold to individual traders as traders move into and through the system.

INFILL TRAYS

The infill trays are used between the post elements for each of the trading unit types. They may act as shading, display trays and can be printed on for branding and advertising.

They are multifunctional elements that can be made from a variety of materials depending on financial constraints, private sector sponsorship as well as the precinct identity. In this instance, they are made from perforated steel mesh and polyethylene.

Perforated steel mesh - provides a usefull surface that can have hooks put onto it for the display of goods.

Polyethylene – is made by a process that is relatively energy efficient compared to other polymers. It is inert chemically inert and easy and cheap to mould and fabricate. Because it is chemically inert, it is commonly used for food and packaging but is also used for street bollards and beer crates. It as an FDA approved nontoxic material that can be produced from renewable resources. It is easily recycled of it is not contaminated. Being a thermoplastic it can be remoulded into new shapes for reuse (Ashby &.Johnson 2002:188)

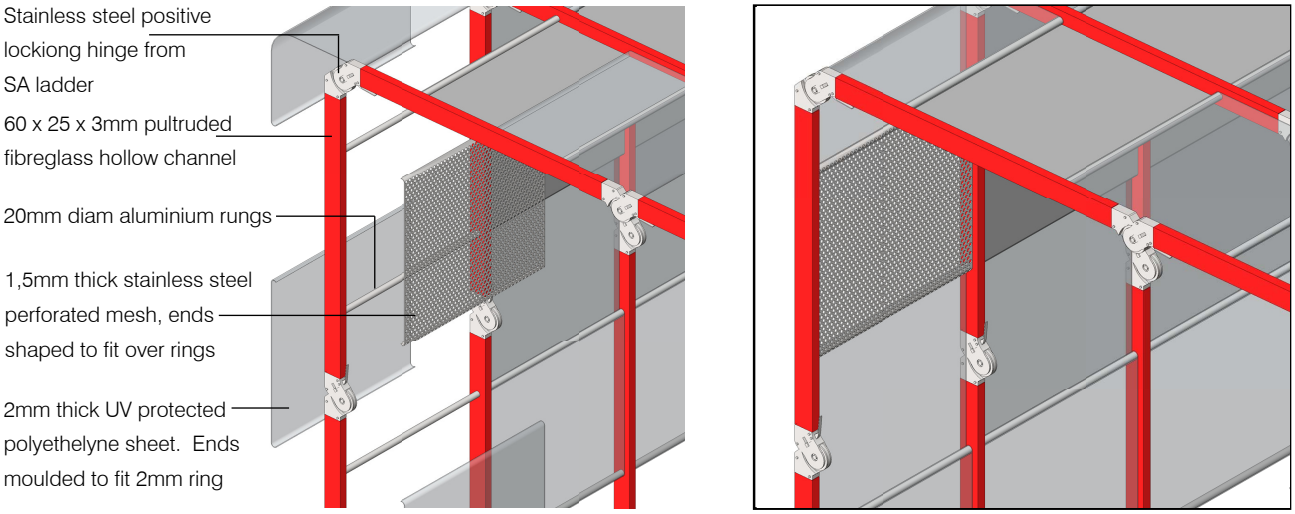


Figure 164.
Detail of high order trader form and components

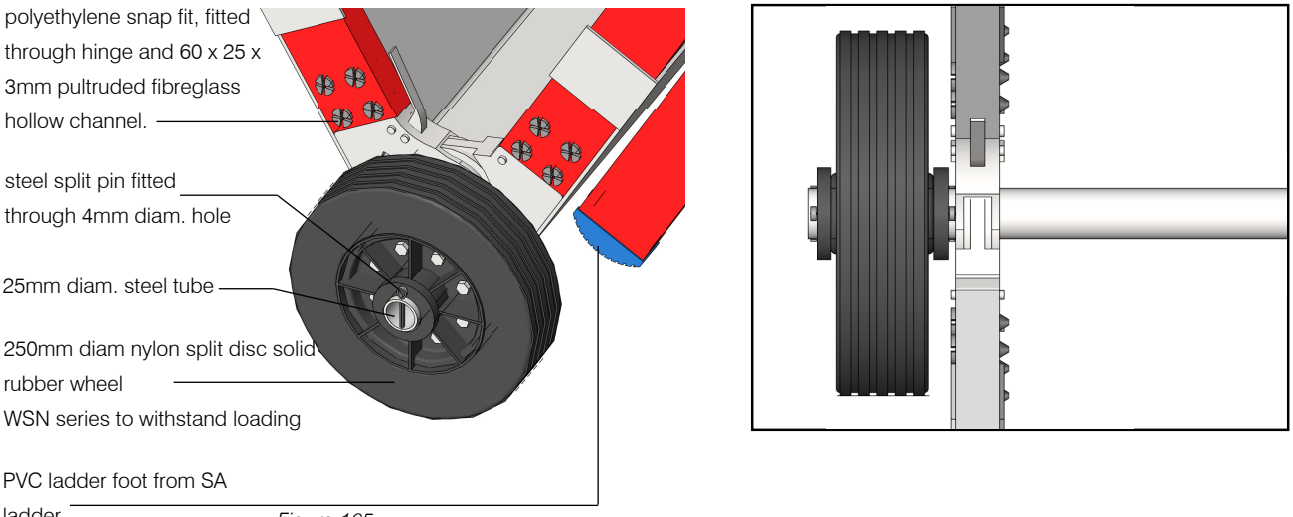


Figure 165.
Detail of high order trader form acting as a wheelbarrow

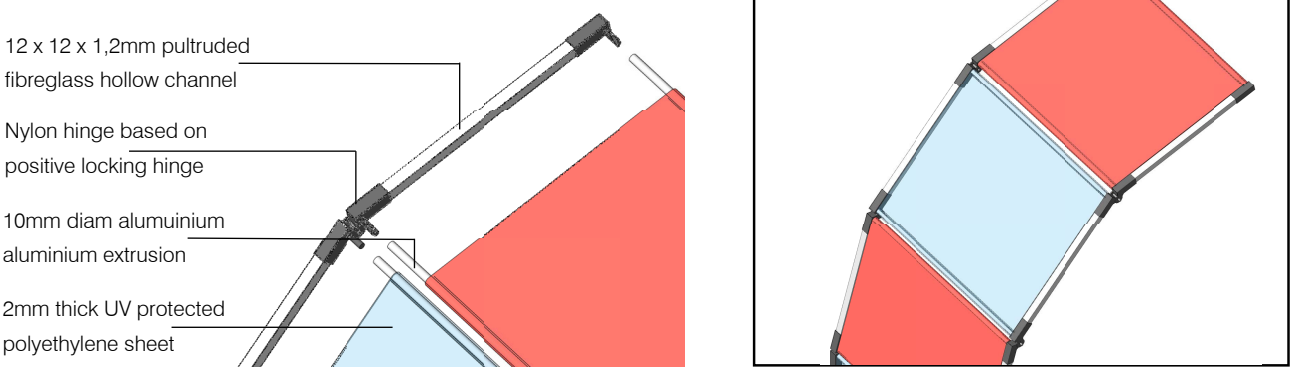


Figure 166.
Detail of Type 1 shading structure

CONCLUSION

"This is Africa giving form to the informal" hopes to be a step towards addressing the needs of public that are usually marginalised and neglected. Streets are the most frequently used public spaces; there needs to be a new way of viewing them as public spaces that host a variety of activities and a wide range of users. In doing so the needs of both individuals and collectives needs to be analysed, accommodated and given the opportunity to co-exist in a democratic street.

Informal street traders are a group that uses this space most frequently but is seldom considered during planning. As many South Africans struggle to find jobs, informal trading seems to be the most efficient way to cater to the needs of the urban poor. Thus informal street trading is likely to be part of the South African socio-economic scene for many years to come and therefore needs to be viewed as more than a temporary and negative phenomenon.

A study of local contexts has revealed that although markets often occur spontaneously, management and design intervention can reduce conflict and clashes within the formal realm as well as between the informal and formal realms. Further, the form and organisation of markets usually favours relatively large traders at the expense of smaller more fragile ones. All this confirms that there is a need to think about market systems and management in a way that acknowledges the diversity of informal traders.

Interior architects are well suited to creating a democratic street, because in order for public spaces to function well, the design of small details must be taken into account. Public spaces are spaces for people, where upon entering users take part in a game of territorial claims. The details and components and objects of use in the market environment, in relation to the space and user, rather than the volumes determine the quality and usability of this public space. 'Giving form to the informal' hopes to have been a step towards accommodating street traders in the streetscape in a way that gives them maximum possible room to manoeuvre within the system whilst embodying the qualities of a democratic street.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