



CHAPTER _____ **1**
Introduction

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1.1 Background and context

“The Lord God took the man and put him in the Garden of Eden to work it and take care of it” (NIV, Genesis 2:15).

In the past, hard work provided just enough food to survive. Produce was consumed sparingly and no food was wasted. As time passed, food and amenities became more obtainable and abundant. The need to save or consume produce sparingly vanished.

The majority of consumers are unaware of the amount of waste they produce and throw away on a weekly basis.

According to Greenworks’ electronic article Watch your waste it was determined in the 1999 State of Environment Report of South Africa (DEAT, 1999) that over 42 million cubic metres of general waste is generated every year across the country, with the largest proportion coming from Gauteng. The report stated that a daily average of 0.7 kg of waste is generated per person in South Africa.

This waste, according to Discovery Education (2009:2), contains 35% packaging & containers; 27.4% nondurable goods; 15% durable goods; 14.3% yard trimmings and 8.3% food waste.

The statistics clearly indicate how uninformed present-day consumers are with regards to the value of waste and the ability to reduce, re-use and recycle.

Organic waste can be utilized as a valuable resource and by implementing the waste management hierarchy (Refer to Fig. 1 and Fig. 2) the amount of waste filling up landfill sites can be reduced.

For instance: by preventing and minimizing waste during production, recycling by means of re-using, recovering products and producing compost from organic materials, a significant amount of waste can be prevented from going to landfill.

Cleaner production	Prevention
	Minimisation
Recycling	Re-use
	Recovery/Reclamation
	Composting
Treatment	Physical
	Chemical
	Biological
Disposal	Landfill

Fig. 1: Waste Management Hierarchy (South African Journal of Science, 2008:242)



Fig. 2: Waste Management (Author, 2012)

1.2 Problem statement

The main problem is that people are naïve and blind to the problem consumer waste has become. They are unaware of the value of waste and that they have the ability to make a difference by reducing, re-using and recycling.

Because of our current ignorance we face two critical environmental problems according to Walker (1997:88) namely mounting waste and dwindling resources.

It is evident that we are exhausting nature's resources without replacing anything. We need to deal with our environment more responsibly and therefore there is a need to design landscapes that are sustainable and robust.

Thabiso Taaka, chief operating officer of Pikitup in Johannesburg states that "...our city is under pressure for landfill space as it simply does not have limitless airspace" (UGF June 2009:36). On average "[w]e are 'landfilling' 4 000 t of waste per day" (Refer to Fig. 3). The same problem of landfill space running out exists in Pretoria (Refer to Chapter 3).

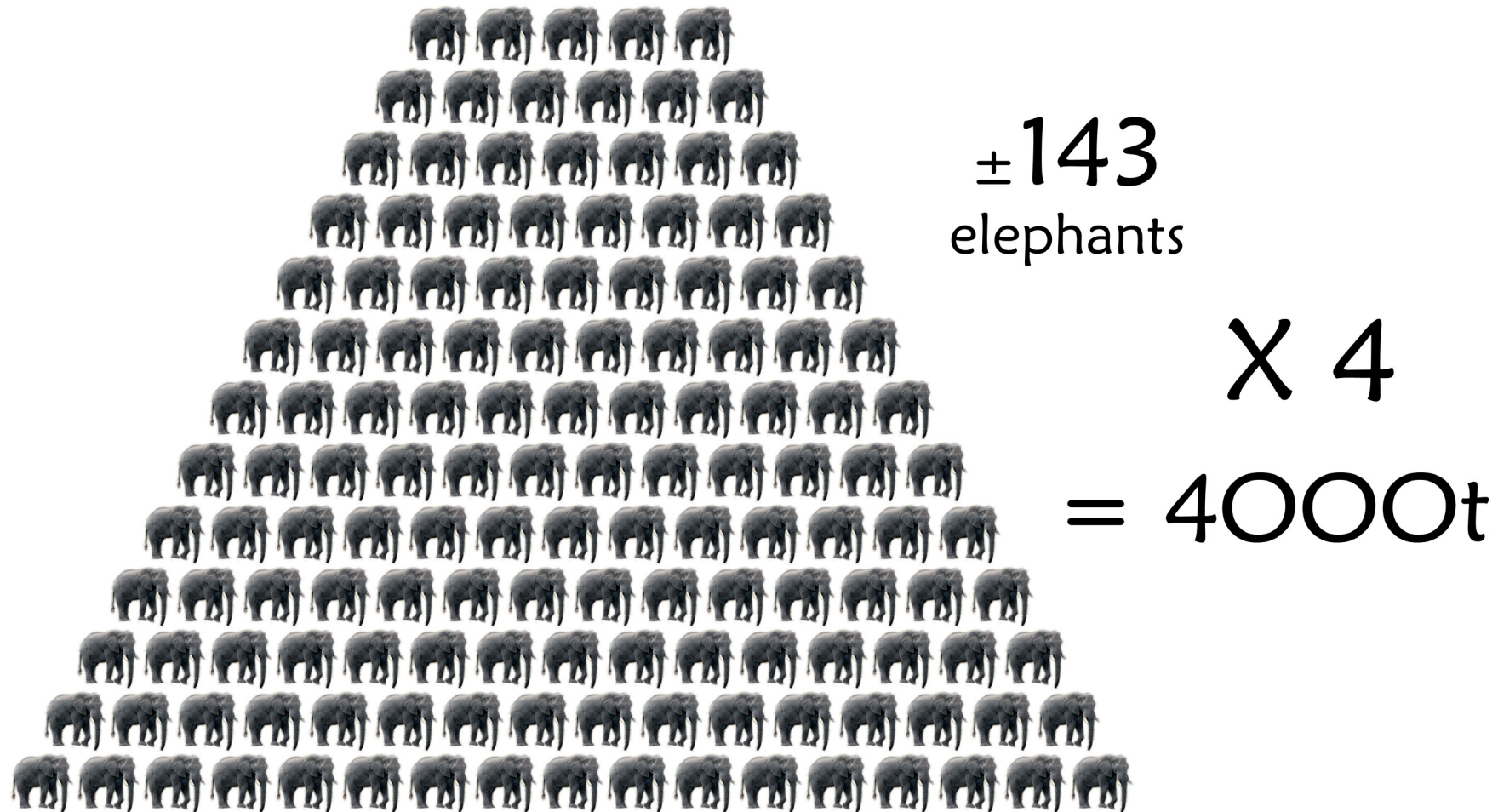


Fig. 3: Land filling 4000 t per day (Author, 2012)

Another issue is that valuable organic waste ends-up at landfill sites because there is limited, and in some areas no, access to garden refuse sites. People have no idea what to do with or where to go with their organic waste.

Existing refuse sites are usually an eyesore and work on the principle of people merely dropping off their waste, jumping back into their cars and, in this way, making their contribution to the disconnectedness of communities (Refer to Fig. 4).



Fig. 4: Mountain view Garden Refuse site (Author, 2012)

1.3 Hypothesis

By using Landscape architecture and its principles, such as the “support and execution of sound and sustainable ecological planning and management to contribute to the conservation of natural resources” (ILASA, 2013), an organic waste recycling facility can be designed in a safe and accessible park-like setting. This will create the opportunity for people from different parts of the city (townships, suburban and urban parts of Pretoria) to meet

and engage with the entire recycling process in an attempt to change their perception of waste and to stimulate the desire to recycle.

“We need to incorporate in our built environment places for gathering and congregation, along with spaces for discovery, repose and privacy in our increasingly bewildering, spiritually impoverished, overstuffed, and under-maintained garden Earth” (Walker, 2002:88).

1.4 Aim and objectives

The focus of the dissertation revolves around waste and telling the story of waste to improve awareness about the waste problem, the value of waste and the recycling possibilities of waste. People can't be expected to act if they don't know.

The aim is to design the waste park as a pod system (a model or guidelines) that can be applied in different areas of the city where similar situations are found. This will aid in reducing the masses of waste that is wrongfully sent to landfill (Refer to Fig. 5).



Fig. 5: Kwaggasrand Landfill site (Author, 2012)

The waste park will be an environmental education and organic waste recycling facility where a well-thought-through waste management plan, guided by a 'Waste Model' (Refer to Fig. 6) will be implemented to provide a park that is safe and more accessible to the public than conventional waste dumping sites.

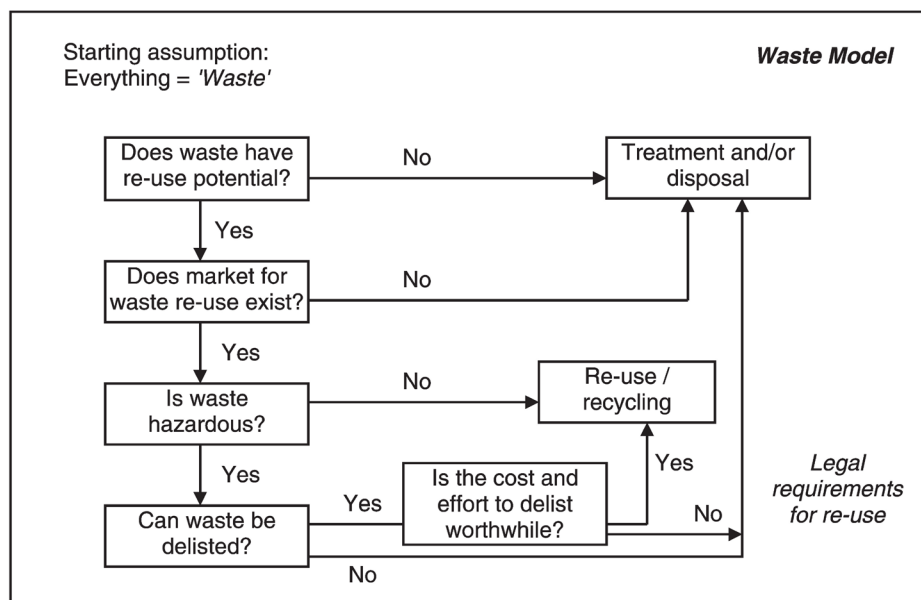


Fig. 6: Managing waste through a 'Waste Model' (South African Journal of Science, 2008:244)

The waste park will be located in an urban community where there is a need for job opportunities (income), education and recreation as well as waste recycling and urban agriculture.

The research will begin by looking at Pretoria and mapping the existing garden refuse and landfill sites. The origin of waste being brought to these sites will be established in order to pinpoint sites in Pretoria where there is a need for waste drop-off points.

1.5 Research questions

Research questions were formulated to set out the important aspects regarding the project that need to be investigated in order to gather all the necessary information to approach and complete the project successfully.

- Is there a need for an organic waste recycling park in Pretoria?
- How do you design a recycling park to be safe and easily accessible?
- How can this proposal change the way people view the value of waste?
- How can waste be used as a resource?
- How can people be made aware of the waste problem in a fun and exciting way?
- Will hands-on experience and allowing the public to take part in the waste recycling process lead to a deeper understanding of the problem?
- How can the problem be turned into a playful or informative experience?
- What recycled materials are available to use in the park and how can they be applied?

1.6 Assumptions and delimitations

The focus of the study is landscape architecture, improving the aesthetics, ecologically planning sustainable landscapes and "integrating man and nature's needs for the benefit of the environment" (ILASA, 2013). The processes and facilities required for the recycling and recovering of all kinds of waste are too complex, a specialist in this domain is needed, therefore, the project is limited to the recycling and composting of organic waste, however, bins will be provided for the recycling of glass, paper, metal and plastics.

A large amount of waste is generated in Pretoria daily. This project can't be seen as the **solution** to Pretoria's waste problem, emphasising the fact that the project won't be taking over the role of the municipality, but will merely attempt to help bring relief to the problem and to educate people about reducing and reusing waste through the recycling and composting of green waste and the recycling, cleaning and re-using of hard waste.

1.7 Research and design methodology

A Descriptive and Analytical Survey method together with a study of precedents will be used in this dissertation to collect and research data (Refer to Fig. 7).

- Descriptive research method

The method is used to describe the current situation by photographing and observing the selected site and the surrounding area.

Descriptive research methods “do not make accurate predictions, and they do not determine cause and effect” (Hale, 2011), therefore it is necessary to carry out an Analytical research method as well in order to get the facts straight.

- Analytical research method

The method is used to analyse the site by means of a *Contextual analysis*: analysing the context of the site, regional connections, public transit, movement around and to the site and *Site analysis*: analysing the site by mapping and gathering data of the selected site.

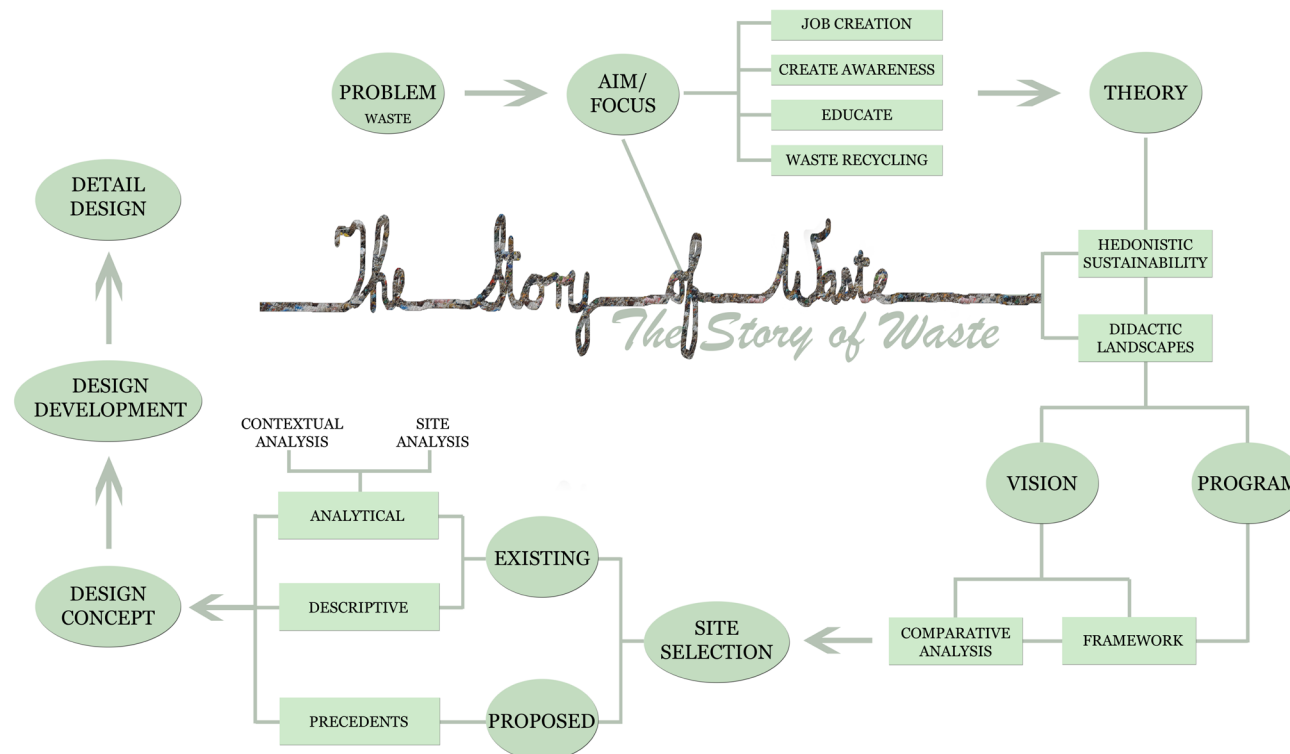


Fig. 7: Research and Design Methodology (Author, 2012)

A *Comparative analysis* of potential sites in Pretoria was also executed to determine the most suitable site for the study area (Refer to Chapter 3 section 3.5).

The “voluntary rating system” called the Sustainable Sites Initiative (SITES) will be used to guide design decisions and assess the final design. The rating system “is designed to encourage development, design, construction and operation of eco-friendly landscapes. The guidelines are fast becoming a standard for sustainability” (POST, 2010).

- Study of precedents

Different, relevant precedents will be studied and used as inspiration to aid in formulating principles and guidelines that will inform and guide the decision-making throughout the design development process.

1.8 Introduction to Site

The information provided in the next section is merely a brief introduction of the site selected for the proposed project before theoretical concepts are explored and an in-depth site selection and analysis are completed in Chapter 3 and 4.

1.8.1 Site location

The selected site is called Berea Park and it is located in Pretoria on the edge of Pretoria South CBD and Sunnyside, next to Nelson Mandela Drive, the Apies River and UNISA Sunnyside campus (Refer to Fig. 8). (For in-depth analysis of the site refer to Chapter 4).

1.8.2 Historical context

Berea Park sports ground was originally a cattle compound in 1882. As the years passed it has been used for a variety of purposes and therefore has had many different names. (Refer to Chapter 4, section 4.2 for an in-depth discussion of the site’s history).

The site was known as Berea Park Cricket club or the Northerns Cricket club. Cricket players who used to play at Church Square moved to Berea

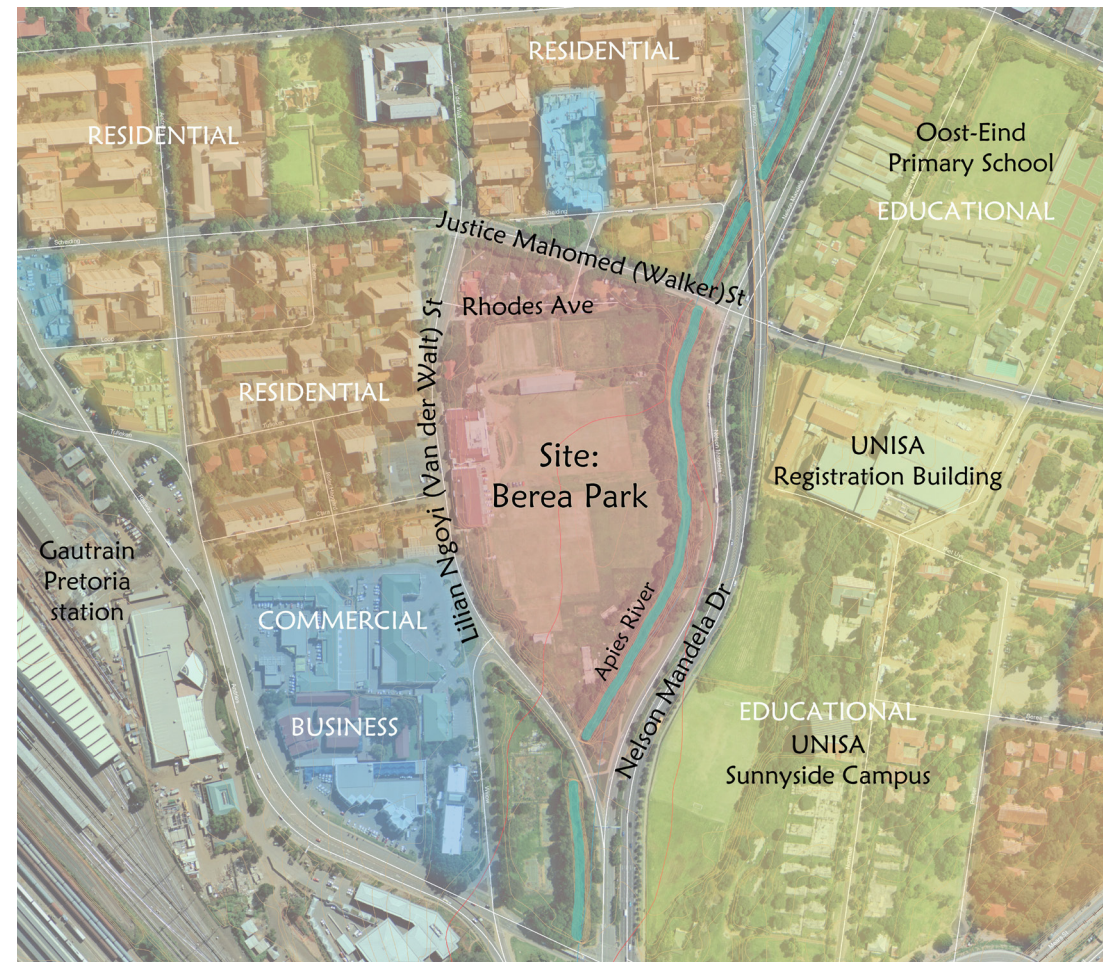


Fig. 8: Site Location (Map from ArcGIS and modifications by Author, 2012)

Park, where they couldn’t disturb councilmen, until SuperSport Park was built.

When the South African Transport Services became the owners of Berea Park Sports Ground, the Berea Southern Clubhouse and the Northern Club Hall were built. The buildings were used as administrative offices and conference venues (WikiUP, 2010).

Berea Park also operated as school grounds for the Founders Primary and High School, but unfortunately the grounds burnt down during a fire in April 2010 and the buildings were left vacant and have remained unoccupied to this day.

The park is currently the property of the Department of Land Affairs who have plans to develop the site into housing, consisting mainly out of a hotel and flats (Refer to Chapter 4, section 4.7).

1.8.3 Physical context

Rhodes Avenue and Justice Mahomed Street (previously known as Walker Street) (above Rhodes Avenue) runs on the northern side of Berea Park. Nelson Mandela drive runs on the eastern side and Lilian Ngoyi Street (previously known as Van der Walt Street) on the western side of Berea Park.

The site is adjacent to the Apies River (parallel to Nelson Mandela drive).

The Gautrain Pretoria station is close to the park – to the west of the park.

There are three buildings on the site: the Southern Clubhouse and the Northern Club hall, which are connected by a bridge with timber frame windows (Refer to Fig. 9). Brick walls have been built in the openings of windows and doors to keep the public out. The third building is the Bowling Greens Clubhouse, a single storey building. The entire site is derelict and closed-off as a result of the fire damage.

1.8.4 Social context

The site is located adjacent to a densely populated residential community with the lowest average income and highest unemployment rate. Residents of Berea Park community are aged between 15 and 39 – relatively young (Gauteng Census, 2001) (Refer to Chapter 3 Table 3).

There are commercial activities next to Berea Park, south-west of the site.

East of the site there are educational facilities such as UNISA Sunnyside Campus and Oost Eind Primary school (Refer to Fig. 8).



Fig. 9: Bridge between Clubhouse and Hall (Ablewiki, 2012)

1.8.5 User

The current users of the site are the residents of Sunnyside and Pretoria CBD and the general public. The study area is used for informal gatherings and soccer games; the buildings, however, are not in use because of the damage caused by the fire.

1.8.6 Land Owner

Department of Land Affairs.

1.8.7 Client

A private developer, such as Waste Group, will hire the site from the Department of Land Affairs and develop the site into the Berea Waste Park. In return the private developer will not only gain financially by operating the waste park, but will also gain waste and increase their BEE rating.

The private developer will have a social responsibility to provide job opportunities, supply Sappi and other organisations with hard waste, generate compost and vegetables and to provide a park to the Pretoria CBD and Sunnyside community.