A HERITAGE IMPACT ASSESSMENT STUDY FOR THE PROPOSED PRASA'S MODERN MAINTENANCE DEPORTS UPGRADE, DURBAN YARD PRASA DEPOT, ETHEKWINI MUNICIPALITY, KWAZULU-NATAL PROVINCE, SOUTH AFRICA

PROJECTS & HERITAGE CONSULTANTS (PTY)LTD

1st Draft

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ACKNOWLEDGEMENT OF RECEIPT

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DECLARATION OF INDEPENDENCE

This report has been compiled by Nkosinathi Tomose, leading archaeologist and heritage consultant for NGT Project and Heritage Consultants. The views expressed in this report are entirely those of the author and no other interest was displayed during the decision making process for the project.

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EXECUTIVE SUMMARY

NGT Projects and Heritage Consultants (Pty) Ltd was been contracted by Ecosolve Consulting (Pty) Ltd to conduct an Heritage Impact Assessment(HIA) (exclusive of Palaeontological desktop study) for the proposed PRASA's modern maintenance deports upgrade, Durban Yard PRASA Depot (Ethekwini Municipality) as part of specialists inputs impact assessment studies required to fulfil the BA process. Nkosinathi Tomose, the lead archaeologist and heritage consultant of NGT Projects and Heritage Consultants, conducted the HIA study for the proposed PRASA's modern maintenance deports upgrade, Durban Yard PRASA Depot, Ethekwini Municipality, KwaZulu-Natal Province, South Africa. The HIA, therefore, only assesses the range of all the manmade or human influenced/altered resources within the Durban Yard PRASA depot, and immediate outside but within the proposed BA project area as marked in Figure 1 and 2. There was no Palaeontological desktop study carried out as part of this HIA study because of the nature and scope of the proposed development, but also because the proposed development does not occur within an area known for dolomitic formation. The field work conducted on the 31st May 2013 yielded 20 sites complexes which are predominantly historical industrial built environment and landscape features in form of buildings. Most of the structures are older 6o years and are therefore generally protected in terms of Section 34 of the NHRA, No. 25 of 1999; KZNHA, No.10 of 1997 (Section 26 (1)); and KZNHB, 2008 (Chapter 8 and section 29 (1)).

1. The identified sites include:

Site Name	Site Type	Age (Years)	Mitigation proposed for current project
DY-1	BEL (Built Environment & Landscape)	≤ 60(some structures are new)	None
DY-2	BEL	≥60	None
DY-3	BEL	≥60	None
DY -4	BEL	≥60	None
DY-5	BEL	≥60	None
DY-6	BEL	≥60	None
DY-7	BEL	≤60	
DY-8	BEL	≥60	None
DY-9	BEL	≥60	None
DY-10	BEL	≥60	None
DY-11	BEL	≤60	Can be restore no need to apply for permit
DY-12	BEL	≥60	Demolish as planned (Amafa exempt the permit)
DY-13	BEL	≥60	None
DY-14	BEL	≥60	None
DY-15	BEL	≥60	None

DY-16	BEL	≥60	None
DY-17	BEL	≤60	Can be restore no need to apply for permit
DY-18	BEL	≥60	None
DY-19	BEL	≥60	None
DY-20	BEL	≥60	None

In summary:

the following sites to be of the earliest industrial development:

- DY-1, DY-2, DY-3, DY-4, DY -DY-15, (sections of) DY-16, DY-18, DY-19, DY-20, (and sections) of DY-1

The following sites are concluded to be of no heritage significance - they are not historical sites:

- DY-7, DY-11 and DY-17

The rest of the site are deemed to be historical sites and they include:

- DY-2 (which fall outside the development footprint), DY-3, DY-4, DY-5, DY-6, DY-8, DY-9, DY-10, DY-12, DY-13, and DY-15,

2. Conclusions & recommendations:

- Based on the above it is concluded that the project upgrade/maintenance will have a minimal impact on the resources identified within the project footprint. Therefore in terms of heritage resources management there are no objections to the project proceeding as planned.
- It should be noted that the current study was a Phase 1 HIA and it only involved the identification, recording, mapping, grading and development of heritage management measures for inclusion in the EMP document.
- Therefore, should PRASA or Transnet wish to carry out any other development on site other than those defined in the current Spatial Development Framework (Figure 36) - further studies, separate from this one will be required.

#Refer conclusions and recommendations below for detailed recommendations of the study

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ABBREVIATIONS

Acronyms	Description
AIA	Archaeological Impact Assessment
AMAFA	Amafa KwaZulu-Natali
ASAPA	Association of South African Professional Archaeologists
BA	Basic Assessment
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
DoE	Department of Energy
EIA practitioner	Environmental Impact Assessment Practitioner
EIA	Environmental Impact Assessment
ESA	Early Stone Age
GIS	Geographic Information System
GPS	Global Positioning System
HIA	Heritage Impact Assessment
I&AP	Interested & Affected Party
KZNHA	KwaZulu-Natal Heritage Act
KZNHB	KwaZulu-Natal Heritage Bill
K.y.a	Thousand years ago
LSA	Late Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
MIA	Middle Iron Age
NERSA	National Energy Regulator of South Africa
NHRA	National Heritage Resources Act
NEMA	National Environmental Management Act
PHRA	Provincial Heritage Resources Agency
PSSA	Palaeontological Society of South Africa
ROD	Record of Decision
PRASA	Passenger Rail South Africa
PDAFP	Proposed Development Area Footprint
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency
SPV	Special Purpose Vehicle

TERMS AND DEFINITIONS

Archaeological resources

This includes:

- material remains resulting from human activities which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in the change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;

- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or boards;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil

Heritage resources

This means any place or object of cultural significance

1. INTRODUCTION

1.1. Project Background

This project is one of the proposed PRASA's deports upgrade and maintenance projects. The Durban rolling stock (upgrade and maintenance) depot is an existing PRASA facility in the KwaZulu-Natal northern region. Located within City of Ethekwini Local Municipality- the erven making up the site is owned by PRASA and zoned for transport use (Figure 1). The site covers approximately 30 hectare and a length of 1680 meters. Durban was identified as the most suitable existing maintenance depot in KwaZulu-Natal for PRASA staging maintenance lifting operations. The selection was made during the site selection process which took place in March 2012 (Arcus GIBB (Pty) Ltd, 2012). It is proposed that over a period of 20 years, new rolling stock will be introduced whilst the existing stock will be phased out. During this phasing period, both existing and new rolling stock will be maintained at the Durban Depot - a process which will also involve construction or upgrade of maintenance depots. Located on the northern side of Durban Metrorail station (Figure 1- red circle), the Durban Yard currently and provides for the following maintenance and operational activities in the Durban Metrorail Region:

- Heavy maintenance of the existing fleet (Transnet-owned facility)
- Automated exterior washing of trains
- Intensive cleaning of trains – no dedicated facility
- Operational staging for approximately 57 train sets of various lengths
- Train driver training on a training simulator (Shosholoza Meyl facility)
- Technical training of maintenance personnel (Transnet-owned training facility)
- Train operating staff resting facilities
- Heavy maintenance of Shosholoza Meyl locomotives – in the heavy maintenance facility where the existing 5M/10M fleet is maintained

Durban Yard has the following operational access:

- Double ended access from the Durban station and Umgeni main lines
- Multi-track access from Durban station
- Multi-track access from Umgeni station

All train operations in the yard are controlled by yard signalling and turnout sets are hand operated by hand tumblers.

This HIA study forms part of specialists' studies inputs into the BA process. The study aims to advise on some of the best suitable heritage mitigation measures for heritage resources in terms of known heritage resources management measures.

1.1.1. Proposed Project Aims

"PRASA intends to modernise and upgrade their current services and their key objective is to promote rail as the preferred mode of transport for the majority of South Africans. [it is suggested by PRASA- 2011] that... 'this will only [be achieved or] become reality through adequate investment in the existing neglected system'. The poor conditions of the unreliable, aging rolling stock is the "single largest obstacle" for PRASA to achieve their planned objective. Combined with the broader strategy to acquire modern technology and a changing passenger demand, PRASA is focused on upgrading and investing in new rolling stock over the next 20 years" (Arcus GIBB, 2012). All the current existing metro trains will be phased out within the 20 year period. The newly proposed technology and improved maintenance practices envisaged for the new fleet will require newly refurbished maintenance depots. Other than infrastructure improvement - the overarching objective is to modernise and make relevant to metro passenger trains to existing and potential clientele/passengers - making the rail industry in the country more user friendly and preferred mode of transport. The current survey area was selected as the best suitable place for the proposed project out of a number of other proposed alternatives - eleven sites were selected during the feasibility or screening phase (Arcus GIBB, 2012). Therefore, the aim of the current study is to advise PRASA on the suitable and sustainable measures to use during the construction and operational phases of the project and its closure in terms of management of the natural and cultural environment. This is done through a compilation of various impact assessment studies that will feed into the current BA process and ultimately the Environmental Management Plan (EMP) document following the completion of the BA. This HIA study will contribute to the development of such documents through assessing and evaluating impacts that affect or have the potential to impact on the cultural environment. The general proposed infrastructure upgrade for this project throughout the country will predominantly involve the follow upgrades:

- Upgrade/Modification of the existing maintenance depots;

- New maintenance infrastructure which will include;
- Approximately 6 or 7 full length roads per depot for routine exams and repairs
- Component exchange roads, 2 full length roads per depot;
- Drop pits, under floor lift, or synchronised jacks for rapid bogie exchange;
- Specialised lifting equipment as required for trains;
- Shore supply (external power supply for trains auxiliaries);
- Roof access platforms;
- An automatic train washing plant, and facilities for pressurised cleaning of under frame equipment;
- An under floor wheel lathe;
- Paint booth;
- Adequate undercover storage for both small and large components;
- Fork lift trucks;
- New Storage Yards; and
- Upgrade/Modification of existing Storage Yards

At Durban Yard PRASA Depot the proposed Depo Staging facility will include the following:

- The upgrade of the Durban Yard staging facility will include:
- ¾ Train external washing - Upgrading of the existing train external washing facility
- ¾ Train on-board toilet clearing - Construction of a new controlled emission toilet clearing and tanking facility
- ¾ Staff facilities - Construction of new staff facilities
- ¾ Train operations staff facility - Refurbishment of the existing train operations staff facility

And the Rail Infrastructure will include:

The upgrade of the existing Durban Yard staging facility railway infrastructure provides an opportunity to improve the site layout, modernise technology, and improve operational functionality and integration with the mainline operations. The upgrade of the Durban Yard staging facility railway infrastructure will include:

¾ External train washer line
¾ Controlled emission toilet clearing and tanking facility line
¾ Train reverse lines
¾ Access tracks to the main line
¾ The existing staging yard will be upgraded to provide staging berths for 41 No.
12-car train sets and 4 No. 6-car trains sets
¾ All rail infrastructure will be automated and signalled
¾ New rail electrical infrastructure will be installed

The above infrastructure is proposed because PRASA wants to design and construct a fully functional depot that:

- Will be able to service PRASA's new metro trains by the time that the new train sets are delivered in April 2015 and will cater for the increased new fleet maintenance demand required by the full fleet deployment up until 2034.
- Will be able to service PRASA's existing metro trains up until the new trains full fleet deployment is completed in 2034.

1.1.2. Terms of Reference for the Appointment of Archaeologist and Heritage Specialist

Because of the nature and size of the proposed development - upgrade and maintenance of Durban Yard PRASA depot and associated infrastructure exceeding a total area of 5000m^2 on an area covering approximately 30 hectares and a length of 1680 meters a need to conduct a BA developed. In terms of the EIA Regulations of June 2010 (Government Notice 543-546 published in terms of the NEMA, No 107 of 1998) the construction of the proposed facilities is listed as an activity that requires environmental authorisation. This is because the project comprises development of structures and bulk infrastructure such as roads, water supply and electrification – a development that occupies an area of less than 20ha. Undertaking an a BA instead of full EIA process is therefore a requirement. The current process comprises of a BA and it involves the identification and assessment of environmental impacts through specialist studies.

Ecosolve Consulting (Pty) Ltd was appointed by PRASA (Ltd) as a lead Environmental Impact Practitioner to manage the BA process and associated impact studies for the proposed development project. Ecosolve Consulting appointment of NGT Projects & Heritage Consultants (Pty) Ltd as an independent and lead CRM firm to conduct an HIA (exclusive of Palaeontological desktop study) for the proposed development as part of specialists (inputs) impact assessment studies required to fulfil the BA process and its requirements. Nkosinathi Tomose, the lead archaeologist & heritage consultant for NGT Projects & Heritage Consultants, conducted the HIA study for the proposed Durban Yard PRASA depot Ethekwini Municipality, KwaZulu-Natal Province, South Africa (Figures 1).

The appointment of NGT Projects & Heritage Consultants (as an independent CRM firm) is in terms of the KZNHA, No. 10 of 1997 (at a provincial level), NHRA, No. 25 of 1999 (as amended), the NEMA, No.107 of 1998 (as amended & the applicable 2010 Regulations), as well as other applicable legislations and bills such as the KZNHB of 21 February 2008.

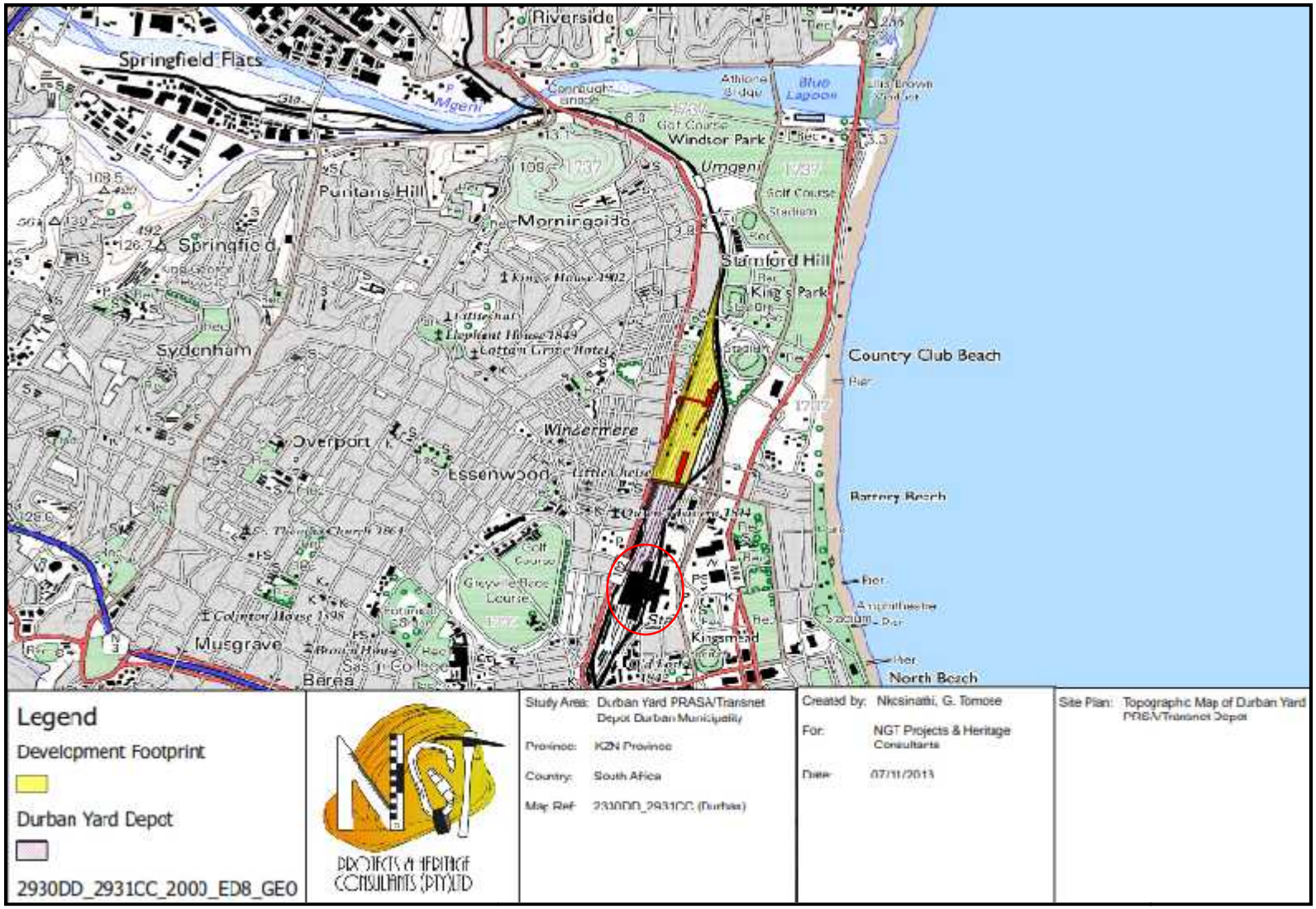

Figure 1 - General location of Durban Yard PRASA/Transnet Depot (Note Durban Station south of the depot - red circle). Also note the location of Moses Mabida and Kings Park Stadium north-east of the depot.

2. BACKGROUND OF THE STUDY AREA

South Africa is rich in diverse forms and types of heritage, ranging from natural to cultural heritage. The natural heritage includes among other things: Geological, Palaeontological, and the various plant and animal species that define the country.

This HIA assesses the range of all the manmade or human influenced/altered resources within the Durban Yard PRASA depot, and immediate outside but within the proposed BA project area as marked in Figure 1

2.1. Background Information Study: A Stone Age, Iron Age and Historical Archaeology (inclu. some Anthropological aspect) of the KwaZulu-Natal

The KwaZulu-Natal province provides archaeologists and cultural scientists alike with rich canvas of heritage resources varying from natural to manmade or human influenced or altered resources. The natural heritage resources of the area in which Durban depot is located is highly degraded - the only remaining significant landmark feature is the Umngeni River (Figure1) passing the site north and joining the ocean in the Blue Lagoon (east). The man made environment of KwaZulu-Natal dates from prehistoric to historic times (time of written documents). Among archaeological (and heritage) time periods it includes: the ESA (Early Stone Age)– 2.6 m.y.a to 250 k.y.a.; MSA (Middles Stone Age)–250 k.y.a to about 35 k.y.a.; LSA (Late Stone Age)– 25 k.y.a to about 2000 k.y.a; 2 Iron Age periods (i.e. Early Iron Age & Late Iron Age)– 2000 k.y.a ; Colonial period and historic period1800s -1994 (and most recent). Other than archaeological resources, other heritage resources found within the KwaZulu-Natal region include: historical built environment and landscape features such as industrial sites, places of worships, monuments and memorials associated with events such as the two South African Wars (commonly referred as Anglo-Boer Wars), the regional wars such as the between the various settlers (Anglo, Boer) and the Zulu's, Imfecane (African expansionist wars) and other uprisings like the Bambatha Rebellion.

The study area falls with a region known mostly for Iron Age, Historic and Industrial Archaeology. The study will therefore focus on the Iron Age, Historic and Industrial Period

(inclusive of all historic built environment & landscape heritage), but without neglecting or excluding the different Stone Age periods or making reference to them (including Rock Art). This is deemed important because Stone Age is gave rise to the first occupation of KwaZulu-Natal and South Africa in general. Among other sites within the province that document the Stone Age archaeology is Sibudu Cave on the coast of KwaZulu-Natal. The cave contains evidence for early forms of cognitive human behavioural patterns in the Middle Stone Age of South Africa some 40 000 years BP (e.g. Wadley, 2005; Wadley et al, 2004; Wadley, 2001). There are also many other caves, valleys and hills of the KwaZulu-Natal that are known to have been occupied by the San people often referred to as San hunter-gathers or the Bushman. Evidence for this includes stone artefacts and an abundance of rock art, predominantly in the form of rock paintings in areas such as the Giants Castle Reserve (e.g. Main Cave) and Kamberg Nature Reserve in the Drakensberg Mountains (e.g. Vinnicombe, 1976). Rock art sites are also documented in Estcourt, Mooi River and Dundee (e.g. Lewis-Williams, 1992). These regions are located north-west of the study area, but do become relevant in defining the archaeological heritage of the province. Rock Art forms archaeology material culture which documents the last phase of the Stone Age Archaeology of the KwaZulu-Natal.

The second phase of occupation of KwaZulu-Natal is known as the Iron Age archaeology. The Iron Age of southern Africa dates to the first millennium AD. The site of Mzonjani, located some 15 km north of Durban is the oldest known Iron Age site in KwaZulu-Natal dating to the third millennium AD. By 1050 AD the Natal region is known to have been occupied by the Zulu people and this is the region in which Durban is located (the former Natal) with what later became Zululand further north-east of the study area. This data is informed by historic accounts, oral traditions, linguistics, anthropological databases (including ethnographic records), and archaeological data as presented through material culture and artefacts. The defining archaeological traits of the Iron Age people in this region and other parts of southern Africa is represented through distinct ceramic traditions, stone walls and other structural features such as grain bins and hut floor remains, kraals and often vitrified cattle dung (& often goat). Within southern Africa the KwaZulu-Natal region is known to have been occupied by the Nguni language speakers of the Eastern Bantu Language Stream. Iron Age structural features characterised this region include stone wall structures defined as the Central Cattle Pattern (C.C.P) (e.g. Huffman, 2007). The earliest known “stonewalling type” in this region is known as Moor Park and it dates from 14th to 16th Centuries AD (Figure 2). The site of Moor Park is

located in the defensive position on the hilltops in the Midlands, from Bergville to Dundee just south of the town of Newcastle (see Huffman, 2010, 2007). Different theories or hypothesis have been argued for and against regarding the potential use of the site of Moor Park. Huffman (2007:33), for example argues that the wall served defensive purposes based on the location and setting of the walling - it is “located on the spurs and ends of hills, stone walls cut the settlement off from remaining terrain perimeter walls enclose about two thirds of the settlement, leaving the back free”. However, it has to be noted that the C.C.P and other forms of Iron Age stonewalling features are not restricted and/or endemic to the eastern Bantu Language Speaking groups or the Nguni people whom the Zulu people form part of. Stone walling is found elsewhere in the country – in regions such as the Limpopo Province, North West Province and the Gauteng Province in South Africa and in other southern African countries such as Zimbabwe and Botswana etc. For example, Huffman argues that, “Iron Age stonewalling occurs over much of Southern Africa "and that “as the most visible sign of agro-pastoral settlement, there are several classifications, mostly for specific areas and few for larger regions” (Huffman 2007: 31). Later on the beehive structure became a dominant feature in the Zulu Nation material culture (Figure 3)

In terms of stonewalling, other known stonewall features in the former Natal region resulted during the times of war - for example, during the South African Wars, the prehistoric wars such as Mfecane, and Anglo-Zulu and Zulu and Boer wars.

The KwaZulu-Natal region is known to have been characterised by historical wars and battles. These wars and battles were within and between the different Zulu clans, Zulu’s and other ‘tribal groups’ such as the Swati and Ndebele, the Zulu’s and the Boers, the Zulu’s and the British (e.g. Anglo-Zulu War), and the British and the Boers with participation from local Zulu’s ,Indian and other groups (e.g. the South African War a.k.a the Anglo-Boer War). This gives a different layer to the history of the region.

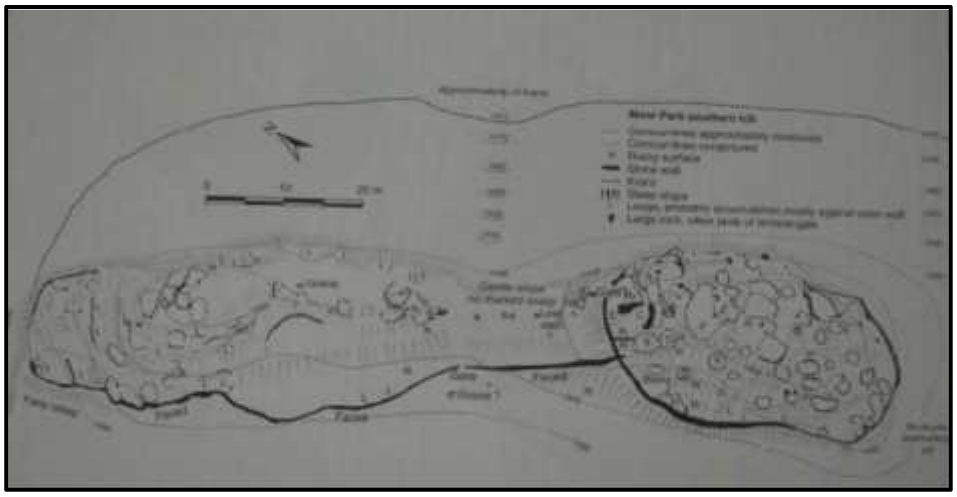

Figure 2- Site of Moor Park; picture taken from T, N. Huffman (2007) to illustrate the C.C.P stonewalling (see also Davies 1974 from which the picture was initial taken).

Figure 3-Pre-industrial Zulu village: beehive huts, note homestead built using thatch material (Colonial time picture) © Laband & Thompson, 2000

The third phase of occupation in current day KwaZulu-Natal was the Late Iron Age – a period just before the contact with the colonial settlers. In KwaZulu-Natal and other parts of southern Africa this period was characterised by a variety of expansionists' battles fought by different chiefdom, culminating to the pre-colonial southern African war called Imfecane (Ommer-

Cooper, 1993). In the province of KwaZulu-Natal it started during the early 1800's when the amaZulu were still under the 'kingdom' of Senzangakhona (Ommer-Cooper, 1993; Knight 1998). In KZN the Imfecane brought about many battles between and within the different local Zulu chiefdoms.

In other parts of the country the Imfecane also affected the Koni (Limpopo Province), the Tswana by the Ndebele ka-Mzilikazi (interior regions of the country) and the amaMpondo, amaHlubi, abaThembu and amaXhosa in the Eastern Cape regions (Wright, 1991). The Imfecane featured very prominent in KwaZulu-Natal during the reign of King Shaka KaSenzangakhona (Ommer-Cooper, 1993). Some of these battle and raids spread as far north to countries like Zimbabwe and Zambia. In Zululand, one of the bigger local chiefdoms that were conquered was the Ndwandwe chiefdom of Zwide kaLanga which were situated north of Shaka's territory around the modern day kwaNongoma (Knight, 1998).

Shaka managed, to some degree, to achieve his ideal kingdom by strategically expanding/extending the traditional amabutho system. The amabutho were the brigade of young men of similar age gathered together for a period of national service (Laband & Thompson, 2000; Torlage & Watt, 1999; Knight, 1998; Ommer-Cooper, 1993; Wright, 1991). The amabutho were quartered at large royal homestead, amakhanda (Figure 4)- which were sited strategically above the surrounding country to guard against both outside attack and internal dissension like the site of Moor Park discussed above. During the times of need, amabutho would be organised into impi to fight and protect the Zulu kingdom. The amabutho, organised into impi, would also be sent out to attack and take over rival chiefdoms that were opposed to King Shaka's rule and in the process incorporating them under his monarchy.

As powerful as it may have been, King Shaka's reign as the Zulu King did not last long as he was assassinated by his younger brothers in September 1828. One of them, Dingane KaSenzangakhona later became King. It is argued that by the time of his assassination he had not yet fully managed to assume and reconcile into his kingdom all the local Zulu chiefdoms: "much chiefdom within the kingdom were still unreconciled to Zulu rule, while Zulu influence south of Thukela (the Natal region) [was still]patchy" (Knight, 1998: 14). The area south of the Thukela River (Natal) was to some degree not in King Shaka's hold. He did not manage to assimilate all the chiefdoms south of uThukela under his rule and this had negative ramification to the Zulu kingdom for the years to come. King Shaka moved the royal homestead to KwaDukuza, Stanger, south of upper Thukela River before his assassination by Dingane (and

Mpande) who later re-relocated and rebuilt it at eMgungundlovu, 'The Place Surrounding the Elephant' in the Emakhazeni valley where King Shaka and King Dingane's forefathers are buried. The moving of the royal homestead by both Shaka and Dingane presents an interesting 'thesis' into the internal dynamics and politics of the Royal House and possibly one of the reasons for the assassination of King Shaka by his brothers. One important reason for the relocation of the royal homestead back to uMgungundlovu- north of the upper Thukela River was the growing influence of the white community at Port Natal (settlers) and the encroaching Trek Boers who crossed UKhahlamba Mountains into Natal in the 1837 (Knight, 1998). The period of encroachment of first Natal, then Zululand represents a fourth phase of settlement or occupation of KwaZulu-Natal. Before it became open to most people during the Union (1910-1961), Nationalist rule (1962-1994), and democratic South Africa (1994- current)

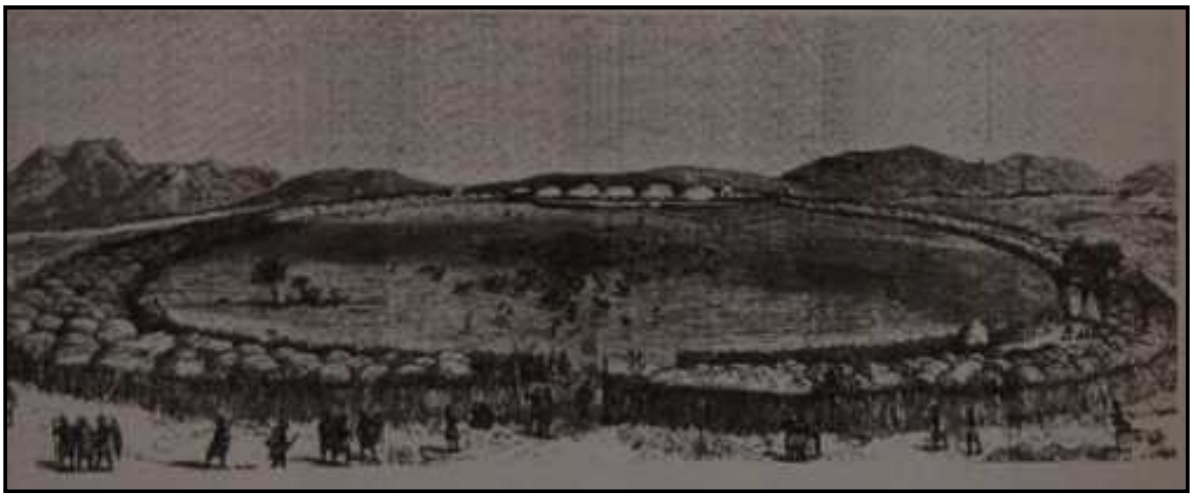

Figure 4 - An illustration of iKhanda or the royal homestead © Laband& Thompson, 2000

The fourth period of occupation of the KwaZulu-Natal came about with the settlement of KwaZulu-Natal by the colonial settlers. The settler and Boer influence south of upper Thukela (uThukela) River and the strong Zulu influence north of the river during the late 1830s become important in understanding the development of the two territories divided by the river that later became known as Natal and Zululand (Figure 5)

Since the 1830s the KwaZulu-Natal landscape was divided into north and the south; Natal in the south and Zululand in the north. Zululand can be broadly defined as the land between the uThukela River (some 100km north of present day Durban) and Swaziland and Mozambique to the north with Natal as the area south of the u-Thukela River. Initially this border was blurry and unmarked by any geographic or physical feature until the colonial times:

“Certainly, this was the extent of the Zulu kingdom during its most static phase, although at times the Zulu kings exercised authority over the country considerable further south, while their hold over the northern borders was always tenuous. In fact, the kings defined their boundaries in term of people who gave them allegiance, rather than by geographical features, and the idea of a single Zulu identity is largely mythical” (Knight, 1998:13)

Knight goes on to argue that “the history of the Zululand and its southern neighbour Natal has always been inextricably mixed, and the physical boundaries between them blurred”. The political border that existed between Zululand and Natal was in prehistoric times not marked by any geographic features. Natal came to existence when, “the south-eastern seaboard had remained unknown to the European world until Christmas Day 1497, when the Portuguese explorer, Vasco da Gama, had noted its existence in his log as he sailed around the Cape and up the east coast of Africa, searching for a route to the Indies. He christened it Terra Natalis, in honour of the birth of Christ, and for the centuries Natal was used to describe the country south of uThukela” (idem: 15). Existing archival evidence for the formal proclamation of uThukela River as the political boundary dividing Zululand (in the north) and Natal (in the South) dates to the 1850’s during King Cetshwayo ka Mpande rule as the Zulu King

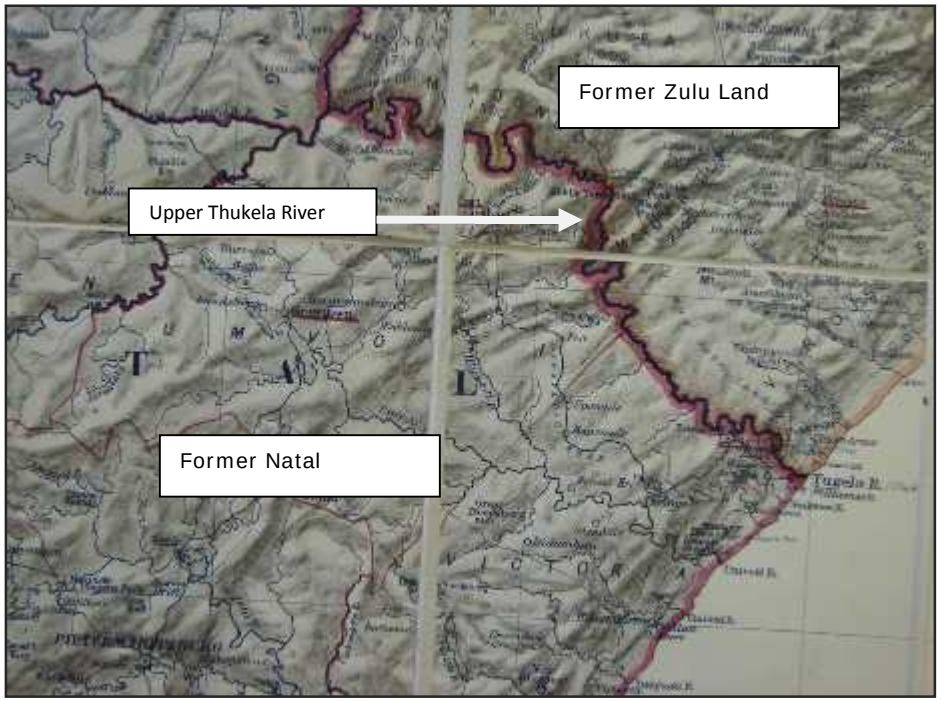

Figure 5- Map showing the Natal (south of Thukela River) and Zululand (north of Thukela River) Boundary. Stanford’s Large Scale Map of Zulu Land with adjoining parts of Natal,

Transvaal and Portuguese Africa, March 4th 1879 © Map Archives, Cullen Library, University of the Witwatersrand, Johannesburg, South Africa.

The above gives a brief overview of the archaeological and historical accounts of the KwaZulu-Natal. Our current study area (Durban Yard PRASA depot) falls within the former Natal region of the present day KwaZulu-Natal Province. This historical overview becomes relevant to the current study because it informs the industrial archaeological component of the report which deals with the railway history and development and the associated built environment and landscape and infrastructure.

21.1. Industrial Archaeology: the South African Railway Industry and Implication for Durban Yard PRASA Depot, Durban, KwaZulu-Natal Province

South African has long history of the railway industry compared to many countries located within the SADC block. It is in fact the mother country for the development of the railway industry in this socio-economic block. The first steam train in South Africa was development in Durban in the 2nd half of the 1800s - the train made its official journey between Durban and the Point on the 26 of June 1860 (Kemm,1997; Day, 1963). The Durban covered a distance of only 3.2 km and it has been said that the journey only took approximately 5 minutes (Day, 1963) (Figure 6). This development led to a wider development of the railway industry in the country. It took another two years before other trains were launched in the country. On the 13 February 1862 Cape Town and Eeste River launch their own trains. However, it has to be noted that the plans in the Cape of Good Hope to launch a railway industry in South Africa had long started before the first train launch in Durban in 1860. For example, "in 1828 the Cape Town Chamber of Commerce suggested to the Cape Colonial Government that a railway, or series of wooden ways, should be built on Cape Town wharf so that casks of wine and brandy could be rolled along them to the ships which would take them overseas" (Day, 1963: 11). This can be interpreted as the first strategic move to the development of the industry in the country. It took another 17 years, in 1845 to register a the first South African railway company - the Cape of Good Hope Western Railway (Ltd) with it Chairman Mr. Harrison Watson (Day, 1963). Mr. Watson was a banker and merchant by profession and he announced the same year (on the 17 October) that his company planned a railway and that "[The]Railway is calculated to be of immense benefit to this flourishing Colony; and as it is confined to the more populous districts in the neighbourhood of Cape Town, the enterprise is certain to return ample

remunerative profits to the shareholders" (ibid:13). However, the reaction to this announcement was rather negative. The promoters of this company had named the Attorney-General of the Cape Colony, the Honourable William Porter, as their legal adviser without properly consulting with him on the subject. Porter refused the invitation and was of the view the attempts were fatal and hopeless. Eventually the plans were put on hold. It took another 6 years since the launch of South Africa's first train in Durban, and 4 years for the Cape launch, for South Africa to significant strides in the development or expansion of the industry. The first expansion took place with the discovery of the diamonds in 1866. The railway lines developed from Cape Town to De Aar Junction and Kimberley. With the discovery of gold in the Witwatersrand in 1884 the railway infrastructure developed into the Transvaal. During this time other railway lines had developed from East London and Port Elizabeth in the modern day Eastern Cape Province. Back to KwaZulu-Natal, Day argues that ".... the little green engine fusing up and down three times a day between Durban and the Point had prepared the way for greater things" (Day, 1963:28). This is regardless of some of the challenges that it faces - at times it is suggested there was a reversion to ox-haulage whenever the engine was in for repairs. The line later expand from Durban and the Point to include a railway to Pietermaritzburg, then Capital of the Natal Colony. The first train in Natal seem to have been marred by constant abortive rides up to a point where external intervention was deemed necessary - Government in London wanted to intervene. This prompted the Natal Government to take the railway construction into its own hands. This suggests that the Natal Railway Company established in 1859 would have been relieved of the responsibility of constructing railways in Natal. Following the takeover, the Natal Government embarked on a series of surveys and engineering planning activities to expand the railway industry in the province (then an independent Colony). The planned routes included the crossing of the Drakensburg mountain range (1873). By 1875 the Natal Government Railways Law was promulgated and it gave powers to the government of the time to "..make, maintain, equip and work certain railways in the Colony of Natal" (Day, 1963: 28). This assertion by Day, suggests that the private industry had not totally died out. "This Act provided that the railway should be of 3ft 6in. gauge and, unless the Lieutenant-Governor directed otherwise, should be a single track" (Idem). A first attempt by government to actively regulate the industry which it subsequently took over in years to come. Since then there has been numerous development of the industry throughout the country. Below are some of the railway companies that developed in South Africa to-date:

Year	Company Name	Modern day South African Province
1862	-Cape Town Railway and Dock Company	Western Cape
1890	Rand Tram	Gauteng
1892	The Link-up Begins (East London & Port Elizabeth, Cape Colony)	Eastern Cape, Western Cape, and Northern Cape
1894	Nederlandsche Zuid Afrikaansche Spoorweg Maatschappij	Gauteng
1898	The Link-up Completed	Eastern Cape, Western Cape, Northern Cape, Free State and Gauteng
1900	Imperial Military Railways	Free State and Gauteng
1902	Central South African Railways	Free State and Gauteng
1916	South African Railways and Harbours	South Africa (all provinces)
1981	South African Transport Services	South Africa (all provinces)
1989	Privatisation ("Legal Succession to the South African Transport Services Act, 1989" transformed the South African Transport Services from a government department into a public company)	South Africa (all provinces)
1990	Transnet	South Africa (all provinces)
In 1997 the subsequent formation of the various Parastatal which include Transnet, PRASA (Metrorail) etc		

Back to Durban, during the construction of the first railway and subsequent launch of the first train in South Africa Durban Station was built to accommodate train travellers on the Durban-Point line which still stand today. The main building was declared the National Monument under the National Monuments Act (1969) and would be considered a Provincial Heritage Site under the NHRA, No. 25 of 1999 and the applicable Amafa KwaZulu Natali heritage legislation (KZNHA, No. 10 of 1997) and Bill (KZNHB of 21 February 2008). The little blue steam locomotive which gave birth to the train industry in south Africa is suggested to be still standing at the Old Point Duran Station which has been converted into a shopping complex. The public inventory of KwaZulu-Natal Provincial Heritage Sites list the site as follows:

SAHRA ID	9/2/407/0011
Site Name	Old Point Railway Station, 111 Point Road, Durban
Description	Main building has an arched entrance flanked by a pair of gable fronts with well proportioned windows Erected in 1890 by the NGR and played a very important part in the development of the port of Durban. This Victorian railway station dates from the eighteen-nineties when the Natal Government Railways experienced a boom. The wrought iron verandah and the b Type of site: Railway Station Previous use: railway station. Current use: offices. From the CBD take West St. (one way) towards the beach. Turn right into Point Rd and travel out. This Victorian railway station dates from the eighteen-nineties when the Natal Government Railways axed the Natal Railway Company.
Town	Durban, Point
District	Durban
NHRA Status	Provincial Heritage Status
Coordinates	N/A

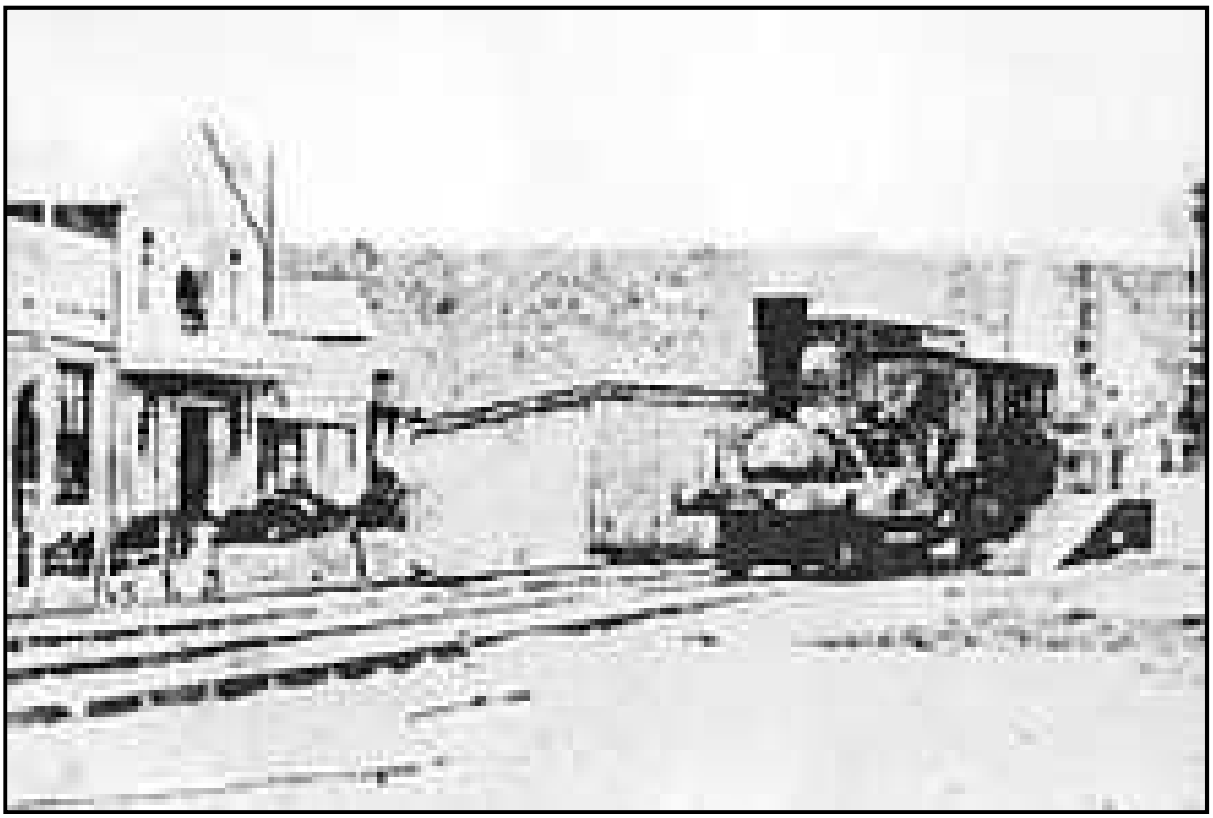

Figure 6-The Natal arriving at Point Station, 26 June 1860

2.2. Description of the affected environment

Table 1 -Durban Yard PRASA Depot, Durban, KwaZulu-Natal Province, South Africa

Location	• The project area is located approximately 9km south and south-east of the Springfield Flats PRASA depot, within Ethekwini l Municipality, KwaZulu-Natal Province of South Africa. It covers approximately30 hectare and a length of 1680meters. The site centre GPS Coordinates are: 29° 50' 00.68"S 30° 01' 37.08" E.
Surrounding Towns/Townships/Industrial Zones/ Villages	• It is located within Durban CBD, west of the site is the suburb of Windermere, Durban beach and Casino/shopping mall are found east of the site (7)
Land Uses in and around the study area	• Railway industry - PRASA/Transnet Durban Yard depot for train maintenance. (Government Parastatals) (Figure 9) • Residential (suburbs of Windermere) (Figure 7) • Recreational - Moses Mabida and Kings Park Stadium, Durban beach (Figure 7 & 8) • Commercial/Entertainment- Durban Casino/Mall and the historic Queens Tavern (Figure 7) • National/Provincial roads such as the M17 • Industry - Durban taxi rank (Figure 8)
Land Owner(s)	• Site- PRASA and Transnet • Government - Ethekwini Municipality • Private -residential (Figure 9) and commercial sites
Current Conditions (on site)	• Highly disturbed landscape - railway infrastructure(Figure 9). Figure 12 gives a detailed list of industrial built environmental features found on site
Applicant	• Ecosolve Consulting on behalf of PRASA
Proposed Development	• Upgrade and maintenance of Durban Yard PRASA/Transnet depot
Access	• Existing national, provincial and local roads, routes and human foot paths. The M4 east of the site and R102 in the west with M17 cutting across (Figure 7).

Defining natural features	• Durban beach and the ocean (Figure 7)
Zoned for	• Transport with some precinct zoned as existing street

Figure 7 - General location of the study area in relation to the suburb of Springfield, Durban beach and Casino/Mall, Moses Mabida and Kings Park Stadium. Durban beach and the ocean are the important natural landmark features. The site is ensconced between the M4 (east), R102 (west) and M17 cutting across .

Figure 8- Surrounding infrastructure - A taxi rank behind Durban PRASA depot parking area (red arrow), Kings Park Stadium (green arrow) and Moses Mabida Stadium (yellow arrow).

Figure 9 - Rail infrastructure (tracks and coaches) and external washer.

Figure 10- Coach cleaning facilities and shunters resting rooms

Figure 11 - Storage facilities

BUILDING LEGEND		BUILDING LEGEND	
Number	Building Name	Number	Building Name
01	Lifting Shop	15	Prasa Technical - Simulators
02	Transnet Tip Top Training School	16	Prasa Technical - Proposed Training Centre
03	Substation	17	Control Point Cabin
04	Pedestrian bridge	19	Coach Cleaners: C- Section
05	Transnet - Tip Top Stores	18	Office - Redundant
06	Gas & Oil Stores	20	Office - Redundant
07	Compressor & Exhauster Room	21	Control Point Cabin
08	Parking & Redundant Workshops	22	Control Point Cabin
09	Train Operations & Shunters	23	Automated Washing Plant
10	Mainline Train Cleaners Facilities	24	Control Point Cabin
11	Transnet Stores (TBC)	25	Coach Cleaners: B- Section
12	Prasa Technical:Workshop (Mainline Trains)	26	Stores Shed
13	Materials Store	27	Office
14	Prasa Technical - Future Workshop	28	Control Point Cabin

LEGEND

- LIFTING SHOP
- TRANSNET TRAINING SCHOOL
- TRAIN DRIVERS & SHUNTERS
- STORES
- REDUNDANT BUILDINGS
- TRAIN CLEANING FACILITIES
- PARKING
- STAFF MESS AND ABLUTIONS
- SITE ACCESS

prasa

GIBB

PRASA ROLLING STOCK

Figure 12 - List of the existing infrastructure at Durban Yard PRASA/Transnet Depot

2.2. Description of proposed activities: Infrastructure Proposed

Table 2 - List of Activities

Activity 1	• Upgrade and maintenance of Durban Yard depot buildings and railway infrastructure
Activity 2	• Clearing of access roads and bulk infrastructure to support the newly proposed Durban Yard depot buildings and railway infrastructure .

2.3. Needs and Desirability

Table 3 –List of activities in-line with the project scope

Activity 1	• Desktop study of the heritage value and integrity of the area under consideration and its surrounding with a particular focus on resources within Durban Yard PRASA depot (refer to 2.4 below for detailed overview of resources in the region under consideration). • Physical identification, documentation and recording of cultural resources within the proposed development area (Durban Yard depot).
Activity 2	• The mapping, assessment and evaluation of the heritage value and integrity of

	the identified heritage resources and assessment of potential impacts as a result of the proposed development on these resources.
Activity 3	• Proposing heritage management measures for inclusion in the BA and later EMP document • Making recommendations to SAHRA and provincial heritage resources authority - Amafa KwaZulu-Natali

3. METHODOLOGY

This chapter outlines the methodologies used in conducting the HIA study for the proposed Durban Yard PRASA depot upgrade and maintenance project. The study area is located within Ethekwini Municipality. This is done in accordance to the Terms of Reference provided by the client for the appointment of heritage specialist and completion of this study. However, some areas of the report follow minimum standards for completion of professional HIA as stipulated in SAHRA minimum standard (2012) such as detailed account to the archaeological and historical background of the study area or region.

3. 1. Step I – Literature Review (Desktop Phase):

- Sources used in this study included, but not limited to published academic papers and HIA studies conducted in and around the region where the current development will take place.
- There was limited use of archival maps -one historical map and one archaeological map and one general travel map showing the proposed area of development and its surround were assessed to aid information about the proposed area of development and its surrounding.
- The above also included a review and assessment of relevant environmental and heritage legislations such as the NEMA (together with the 2010 EIA Regulations) and the NHRA.

3.2. Step II – Physical Survey

The physical survey of the study area aimed to address the following main areas of concern raised by the client in the specialist Terms of Reference:

1. To conduct an onsite verification survey for the proposed Durban Yard PRASA depot upgrade and maintenance project area.
2. To identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the proposed Durban Yard PRASA depot upgrade and maintenance project area. Use will be made of an notated maps where appropriate.

In order to address these concerns:

- The physical survey of the proposed Durban Yard PRASA depot upgrade and maintenance project area was conducted between 31 May 2013.
- The survey covered an area of approximately 40ha - on foot and track logs of the survey were recorded using Garmin GPSmap 62s.
- The objective of the survey was to locate and identify archaeological and heritage resources and/or sites and objects, occurrence within and immediately outside the proposed development footprint. To record and map them using necessary and applicable tools and technology.
- The physical survey was deemed necessary since the desktop phase of the project yielded few known archaeological resources and other heritage/historic resources about the region in which the current study area is located. The survey also paid special attention to disturbed and exposed layers of soils as such as eroded surfaces because these areas are more likely to exposed or yield archaeological and other heritage resources that may be buried underneath the soil and be brought to the earth surface by animal and human activities such as animal barrow pits and human excavated grounds. The edges/sides of dirt roads were also inspected for possible Stone Age scatters as well as exposed Iron Age implements and other resources. Drainage and ephemeral wash were also investigated for resources.
- The following technological tools and platforms were deemed important for documenting and recording located and/or identified sites:

- Garmin GPSmap 62s – to take Lat/Long coordinates of the identified sites and to take track logs of each of the three corridors.
- Lenovo ThinkPad aided with Garmin Basecamp Software, Google Earth – to plot the propose corridors.
- Quantum GIS Lisboa (1.8.0) was used to plot all the identified features and/or resources and to develop heritage maps in order to inform the heritage analysis of the proposed Durban PRASA depot upgrade and maintenance project area.
- Maps provided by the client before the survey also proved invaluable
- Survey coordinates and data provided by the client were used to map the development area footprint.
- Samsung camera – was used to take photos of the affected environment and the identified heritage sites.

3.3. Step III – Data Consolidation and Report Writing

During field work and on the return from the field the following were addressed:

1. Assessment ofthesignificanceoftheculturalresourcesintermsoftheirarchaeological,historical,scientific, social, religious, aesthetic and tourism value"
2. Description of possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
3. Proposal ofsuitable mitigation measures to minimize possible negative impacts on the culturalresources;
4. Review of applicable legislative requirements - Section 3.1. of this Chapter (i.e. Chapter 3) addresses this concern as well as Section 5.5 of Chapter 5 discusses Sections of the NHRA, No. 25 triggered by the current study findings
5. Highlighting of assumptions, exclusions and key uncertainties". Chapter 4 (below) of this report address this concern.

The final step involved the consolidation of the data collected using the various sources as described above. This involved the manipulation of data through Quantum GIS. Assessing the significance and potential impact of the identified sites, discussing the finds, report writing and making recommendation on the management and mitigation measures of the identified sites and resources as well as the impact and influence of these sites and resources on the proposed corridor.

3.4. Assessment of Site Significance in Terms of Heritage Resources Management Methodologies

The significance of heritage sites was based on four main criteria:

- Site integrity (i.e. primary vs. secondary context)
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures)
  - Density of scatter (dispersed scatter)
  - Low - <10/50m^2
  - Medium - 10-50/50m^2
  - High - >50/50m^2
- Uniqueness and
- Potential to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows:

- A - No further action necessary;
- B - Mapping of the site and controlled sampling required;
- C - No-go or relocate pylon position
- D - Preserve site, or extensive data collection and mapping of the site; and
- E - Preserve site
- F - Impacts on these sites by the development will be evaluated as follows:

Measure of Heritage Sites Significance

The following site significance classification minimum standards as prescribed by the SAHRA (2006) and approved by the ASAPA for the SADC region were used for the purpose of this report.

Table 4: Site significance classification standards as prescribed by SAHRA

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	Grade 3C	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	Grade 3D	Medium Significance	Recording before destruction
Generally Protected C (GP.A)	Grade 3E	Low Significance	Destruction

3.5. Methodology for Impact Assessment in terms of Environmental Impact Assessment Methodologies including Measures for Environmental Management Plan Consideration

The determination of the effects of environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the environmental practitioner through the process of the BA. The impact evaluation of predicted impacts was undertaken through an assessment

of the significance of the impacts. This is in line with specialist requirements as required by the client. For example, the request that:-

The impact methodology [should]concentrate on addressing key issues. This methodology to be employed in the report thus results in a circular route, which allows for the evaluation of the efficiency of the process itself. The assessment of actions in each phase [that should] be conducted in the following order:

- Assessment of key issues;
- Analysis of the activities relating to the proposed Durban Yard PRASA depot upgrade and maintenance project area;
- Assessment of the potential impacts arising from the activities, without mitigation, and
- Investigation of the relevant mitigation measures for both the construction and operational phases.

The following Assessment Criteria is Used for Impact Assessment

An impact can be defined as any change in the physical-chemical, biological, cultural and/or socio-economic environmental system that can be attributed to human activities related to alternatives under study for meeting a project need. The significance of the aspects/impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

The significance of the impacts will be determined through a synthesis of the criteria below:

Probability: describes the likelihood of the impact actually occurring

- Improbable:thepossibilityoftheimpactoccurringisverylow,duetothecircumstances,designor experience.
- Probable:thereisaprobabilitythattheimpactwilloccurtotheextentthatprovisionmustbemade therefore.
- Highly Probable: it is most likely that the impact will occur at some stage of the development.
- Definite: theimpactwilltakeplaceregardlessofanypreventionplansandtherecanonlyberelied on mitigatory measures or contingency plans to contain the effect.

Duration: the lifetime of the impact

- Short Term: the impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
- Medium Term: the impact will last up to the end of the phases, where after it will be negated.
- Long Term: the impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.
- Permanent: the impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

Scale: the physical and spatial size of the impact

- Local: the impacted area extends only as far as the activity, e.g. footprint
- Site: the impact could affect the whole, or measurable portion of the above mentioned properties.
- Regional: the impact could affect the area including the neighbouring residential areas.

Magnitude/Severity: Does the impact destroy the environment, or alter its function

- Low: the impact alters the affected environment in such a way that natural processes are not affected.
- Medium: theaffectedenvironmentisaltered,butfunctionsandprocessescontinueinamodified way.
- High: functionorprocessoftheaffectedenvironmentisdisturbedtotheextentwhereittemporarilyor permanently ceases.

Significance: Thisisanindicationoftheimportanceoftheimpactintermsofbothphysicalextentand time scale, and therefore indicates the level of mitigation required.

- Negligible: the impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.
- Low: the impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
- Moderate: the impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.

- High: The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

The significance is calculated by combining the criteria in the following formula:

Sum (Duration, Scale, Magnitude) x Probability(Table -2)

S = Significance weighting; Sc = Scale; D = Duration; M = Magnitude; P = Probability

Table 5 -The significance weightings for each potential impact are as follows:

Aspec	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severit	Low	2

	Medium	6
	High	8
Significance	Sum (Duration, Scale, Magnitude) x Probability	
	Negligible	≤20
	Low	>20≤40
	Moderate	>40≤60
	High	>60

Thesignificanceofeachactivitywasratedwithoutmitigationmeasures(WOM)andwithmitigation(WM) measures for both construction, operational and closure phases of the proposed development. To address the question of Heritage Management Plan the following table is used for Measures to be included in the EMP. This table is relevant in that it addresses key issues at the various stages of the project by also addresses how some of the key concerns that develop from a heritage point of view can be mitigated.

Table 6 -Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: Description of the objective, which is necessary in order to meet the overall goals; these take into account the findings of the environmental impact assessment specialist studies	
Project component/s	List of project components affecting the objective
Potential Impact	Brief description of potential environmental impact if objective is not met

Activity/risk source	Description of activities which could impact on achieving objective		
Mitigation: Target/Objective	Description of the target; include quantitative measures and/or dates of completion		
Mitigation: Action/control		Responsibility	Timeframe
List specific action(s) required to meet the mitigation target/objective described above		Who is responsible for the measures	Time periods for implementation of measures
Performance Indicator	Description of key indicator(s) that track progress/indicate the effectiveness of the management plan.		
Monitoring	Mechanisms for monitoring compliance; the key monitoring actions required to check whether the objectives are being achieved, taking into consideration responsibility, frequency, methods and reporting		

4. ASSUMPTIONS, EXCLUSIONS AND UNCERTAINTIES

The assumptions, exclusions and uncertainties that exist in terms of the present study are discussed the following sub-sections.

4.1. Assumptions

The current study is Phase 1 HIA. As such, a historical and archival desktop study as well as a field survey were undertaken to identify tangible heritage resources located in and around the proposed development area footprint. The assumption is that a heritage social consultative process would have taken place with some of the Interested and Affected Parties (I&AP) to uncertain presence or known archaeological or heritage sites or existence of graves and cemeteries etc within Durban Yard

PRASA depot. However, there was no formal heritage social consultation that took place as part of the study - this is due to the nature of the current study- BA not a full EIA process. The study assumes that the amount of resources located in and around the propose Durban Yard PRASA depot represents the total amount of physical or tangible resources distributed in and around it.

4.2. Exclusions

The following exclusions or limitations have direct consequence to the study and its results:

- There was no deeds search for the proposed Durban PRASA depot upgrade and maintenance project area - the study area is owned by the developer, SARCC (Ltd)/PRASA and Transnet. PRASA is in the case the developer. There was therefore no need to conduct a deeds search for the property.

4.3. Uncertainties

Heritage studies like most other specialist studies often experience many challenges during and after the physical survey of the proposed development area. From an archaeological and general heritage perspective, the assumption is often made that, the amount of identified archaeological and heritage resources during physical survey of the proposed development area represent some of the total amount of resources that exist in and around or along the development area. This is not often true because the nature of some the archaeological and heritage resources are subterranean in nature and as such, one cannot totally rule out their presence or existence within the proposed development area even though they are not recorded and map as part of the current study. These resources may be exposed or brought to the surface of the earth during the construction phase of the project which will involve excavation for infrastructure development and clearing of top soil in some instances. This presents one of the major uncertainties regarding the 'holistic' management or archaeological and heritage resources within and around the proposed development area. But, i doubt there will be any such resources with Durban Yard development footprint.

Archaeologist and heritage specialist alike refer to discovery of such resources as chance finds and to mitigate such uncertainty, it is advisable that should such chance finds be made of archaeological and heritage resources on site, the Environmental Control Officer (ECO) responsible for the site should report them to the nearest SAHRA or Amafa office or the nearest museum or call an archaeologist and heritage specialist to investigate the finds make necessary recommendations.

5. FINDINGS

5.1. Cadastral Search

The following map of the study area were used to assess the evolutions of the landscape in and around the area in which the proposed Durban Yard PRASA depot upgrade and maintenance project area:

The South Africa (Republic of South Africa): 1:250.000 Map of Durban (Reference: SH 36-5 Series ZS01 (1955). Reprinted by the Arm Map (NSPM), Corps of Engineers, U. S. Army Washington DC in 1955) shows the railway siding and station in which are study area is located. Structures are also indicated on the map (blue circle) (Figure 13). Similar siding and/or station is also shown at the Point (yellow circle) (Figure 13). This can be interpreted to mean that by 1955 there was already infrastructure in the area between Durban Station (south of the yard) and Durban Yard depot. This would mean that the 60 year period for the general protection of historic built environment and landscape features is applicable in terms of the NHRA, No. 25 of 1999.

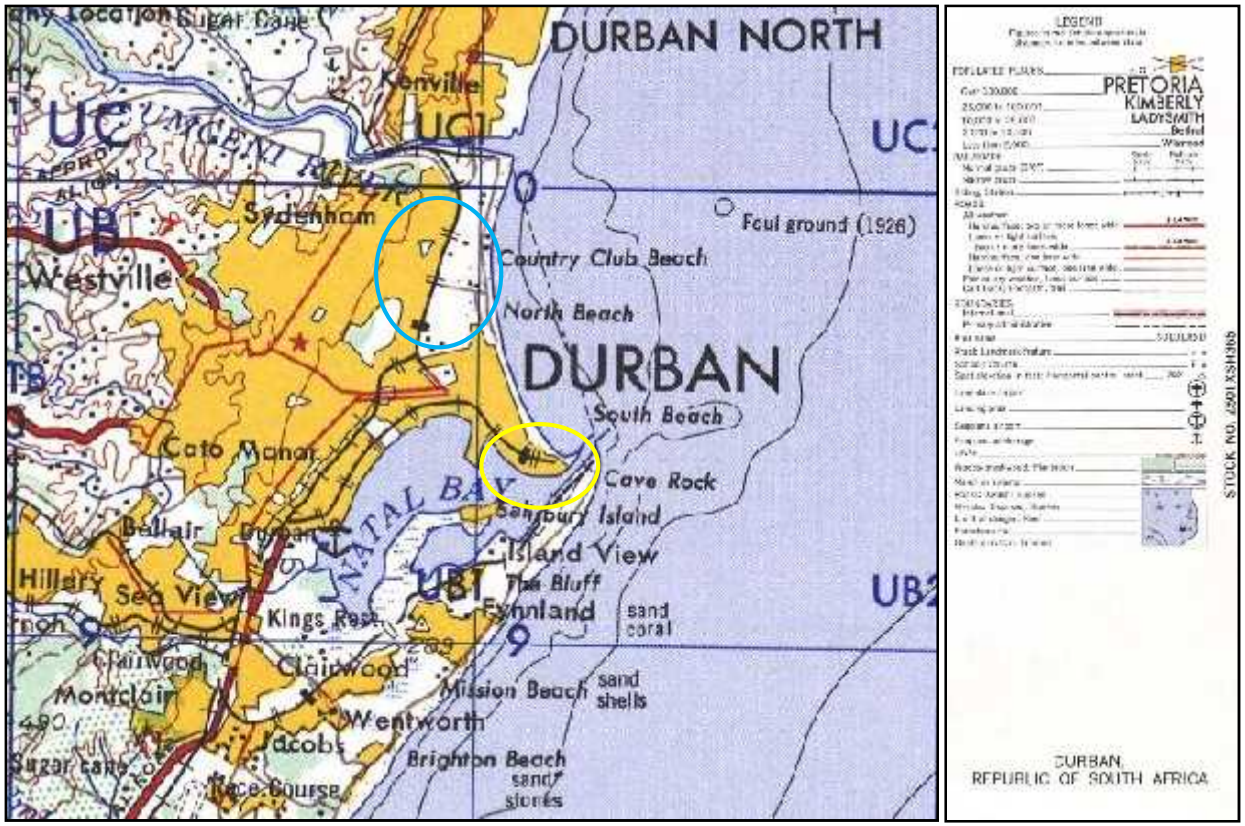

Figure 13- South Africa (Republic of South Africa): 1:250.000 Map of Durban. Reference: SH 36-5 Series ZS01 (1955). Reprinted by the Arm Map (NSPM), Corps of Engineers, U. S. Army Washington DC in 1955.

5.2.Deeds Search:

No deeds search was conducted as part of the study. The project area is known to be the property of SARCC (Ltd)/ PRASA and Transnet and it involves upgrade and maintenance of existing infrastructure. No new land will be surveyed for the purposed upgrades and development in Durban Yard PRASA depot for the current proposed development - as such title deeds search was not deemed necessary. The deeds information provided in the Arcus GIBB (2012) report is deemed sufficient enough. Deeds

search plays a pivotal role in cases where there multiple stakeholders with different interests in project area with issues such as land claims and/or presence of ancestral graves etc. In the case both PRASA and Transnet are government Parastatals.

5.3. Field Survey and Identified Archaeological/Heritage Resources

The physical survey of the project area took place on the 31 May 2013. The survey did not yield any archaeological (from Stone Age to historical archaeology),burial grounds and graves, and other cultural features such as places or spaces of prayer . It only yielded 20 sites complexes which are predominantly historical industrial built environment and landscape features in form of buildings. Below is the list of sites yielded by the survey, their grading, age, and levels of significance as well as photographic records:

Site	DY-1
Type	Structures
Density	Approximately 8 structures
Location/Coordinates	S29 49 54.6 E31 01 40.9
Approximate Age (More than 60 0r Less than 60 years old)	• Some of the structures are older than 60 years • Some less than 60 years old
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site complex consists of approximately 8 structures which include: a lifting shop shed, 2 utility buildings/offices, Transnet training school and 4 parking lots (e.g. Figure 14 also refer Figure 12). The utility buildings/offices are	

significantly old industrial structures associated with the depot. The old structures are however not in a good state - they are not well maintained. Below are is grading of the historical structures

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3C	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities:

1. Construction Phase: construction and restoration of buildings on site. However, structures forming part of site complex YD-1 will be unchanged during the depot upgrade

Operation Phase: maintenance of depot

	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)

Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project -site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		
Residual Impacts: • The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.		

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot. The site consists of some historic industrial sites of low heritage significance. Should PRASA or Transnet wish to demolish some portions of structures making up DY-1 in future - they should apply for a permit with Amafa and a full conservationist architectural recording and documentation	
Project component/s	Construction phase of the project
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).

Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	Exclusion of the above objectives from the overall EMP		
Mitigation: Target/Objective	The site will probably be not be directly impacted - the Spatial Development Framework suggests that the buildings/structure making up DY-1 will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe
Should PRASA or Transnet wish to demolish some portions of structures making up Dy-1 in future - they should apply for a permit with Amafa and a full conservationist architectural recording and documentation needs to take place for historic buildings/structures.		ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.		
Monitoring	ECO		

Figure 14- Train lifting shop shed (internal & external views) and offices attached to the lifting shop.

Site	DY-2
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 52.9 E31 01 33.7
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site complex consists of shunters/drivers office and rest room and parking (Figure 20).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3C	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Note! There are not further actions for this site because it falls just outside the propose upgrades and maintenance development footprint

Figure 15 - Shunters/drivers office and rest room and parking

Site	DY-3
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 42.5 E31 01 38.0
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years old
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description:	

The site is a control cabin point - shunters operations for track controls (Figure 16).

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities:

1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the structure will be unchanged during the depot upgrade

Operation Phase: maintenance of depot

	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible

Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		
Residual Impacts: • The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.		

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.	
Project component/s	Construction phase of the project
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).
Project component/s	Operational phase of the project

Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe
Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).		ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.		
Monitoring	ECO		

Figure 16- Control cabin point

Site	YD-4
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 43.8 E31 01 37.9
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a train drivers/shunters ablution facility (Figure 17). Its conditions are bad, there are pipe leaks in all angles of the structure	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities: 1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the building will be unchanged during the depot upgrade Operation Phase: maintenance of depot		
	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		

Residual Impacts:

- The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.

Project component/s	Construction phase of the project		
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).		
Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe

Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).	ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.	
Monitoring	ECO	

Figure 17- Train drivers/shunters ablution facilities

Site	YD-5
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 44.2 E31 01 37.8
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a train drivers/shunters office building. It looks old but the window frames and seals gives it up. However, we have graded it as older structure which has been modernised (Figure 18).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities: 1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the building will be unchanged during the depot upgrade Operation Phase: maintenance of depot		
	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		

Residual Impacts:

- The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.

Project component/s	Construction phase of the project		
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).		
Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe

Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).	ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.	
Monitoring	ECO	

Figure 18-Train drivers/shunters offices

Site	DY-6
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 46.60 E31 01 36.83
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a control cabin point- train drivers/shunters (Figure 19).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities: 1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the structure will be unchanged during the depot upgrade Operation Phase: maintenance of depot		
	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		

Residual Impacts:

- The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.

Project component/s	Construction phase of the project		
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).		
Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe

Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).	ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.	
Monitoring	ECO	

Figure 19- control cabin point

Site	DY-7
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 49.27 E31 01 36.05
Approximate Age (More than 60 0r Less than 60 years old)	Less than 60 years old
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is Durban Yard PRASA coach cleaning building . The building looks to be a relative new industrial structure -most probable dating to the late 1970s or 1980s as these types of building designs are popular at the time (Figure 20).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
		Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Note! – This is not a heritage site/resources - therefore there are no further actions in terms of heritage resources management recommended for it (Figure- 20).

Figure 20- Durban Yard PRASA coach cleaning building

Site	DY-8
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 51.0 E31 01 35.9
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a small control cabin point for shunters (Figure 21).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities: 1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the structure will be unchanged during the depot upgrade Operation Phase: maintenance of depot		
	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		

Residual Impacts:

- The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.

Project component/s	Construction phase of the project		
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).		
Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe

Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).	ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.	
Monitoring	ECO	

Figure 21 - Control cabin point- shunters

Site	DY-9
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 51.6 E31 01 35.5
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a water pump house also old (Figure 22).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities: 1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the structure will be unchanged during the depot upgrade Operation Phase: maintenance of depot		
	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		

Residual Impacts:

- The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.

Project component/s	Construction phase of the project		
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).		
Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe

Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).	ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.	
Monitoring	ECO	

Figure 22- Pump house

Site	DY-10
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 53.1 E31 01 34.9
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a small substation just south of the overhead foot bridge leading to DY-2 and the taxi rand on the western side of the depot (Figure 23).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities: 1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the structure will be unchanged during the depot upgrade Operation Phase: maintenance of depot		
	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		

Residual Impacts:

- The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.

Project component/s	Construction phase of the project		
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).		
Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe

Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).	ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.	
Monitoring	ECO	

Figure 23- Substation (small)

Site	DY-11
Type	Industrial feature and structure
Density	Over 5 different features and structure
Location/Coordinates	S29 49 53.3 E31 01 34.8
Approximate Age (More than 60 0r Less than 60 years old)	Less than 60 years old
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a an existing automated washer. Most of the washer infrastructure looks to be recent (Figure 24).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
		Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Note! – This is not a heritage site/resources - therefore are no further actions in terms of heritage resources management recommended for it (Figure- 24). Restoration activities proposed for this site can proceed.

Figure 24-Existing automated washer

Site	DY-12
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 58.76 E31 01 32.95
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a control point cabin for shunters (Figure 25). According to the PRASA propose Spatial Development Framework the site is to be demolished (Figure 26).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed
Nature of Activities:							

1. Construction Phase: construction and restoration of buildings in Durban Yard. The site is proposed for demolished However, the will be unchanged during the depot upgrade Operation Phase: N/A		
	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: No further action required the current site mapping in deem sufficient enough even though the structure is older than 60 years.		
Cumulative impacts: Once demolished there are no further impacts predicted		
Residual Impacts: The project will positively enhance the aesthetic appeal of the depot, its		

usability and effective functioning of the train system in Durban.

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.			
Project component/s	Construction phase of the project		
Potential Impact	The site is proposed to be demolished.		
Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	No further action required, the current mapping of the site is deemed sufficient enough. But Amafa should be informed of such actions.		
Mitigation: Action/control		Responsibility	Timeframe
Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).		ECO	Operational phase or during construction phase should the need arise.
Performance	The type of indicator used here will be Actionable Indicators – this will		

Indicator	measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.
Monitoring	ECO

Figure 25- Control cabin point - shunters

Site	DY-13
Type	Structure
Density	1 structure
Location/Coordinates	S29 49 59.7 E31 01 35.3
Approximate Age (More than 60 0r Less than	Older than 60 years

60 years old)	
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a modernised and decorated control point cabin for drivers/shunters (Figure 2).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Note! – No further actions in terms of heritage resources management recommended for it (Figure- 26).

Figure 26 - modernised and decorated control point cabin

Site	DY-14
Type	Structure
Density	1 structure
Location/Coordinates	S29 50 03.4 E31 01 36.0
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description:	

The site is an old storage structure that has been recently altered to fit the garage rolling door and associated ramp (Figure 27).

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities:

1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the structure will be unchanged during the depot upgrade

Operation Phase: maintenance of depot

	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)

Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		
Residual Impacts: • The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.		

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.	
Project component/s	Construction phase of the project
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).

Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe
Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).		ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.		
Monitoring	ECO		

Figure 27- old storage structure

Site	DY-15
Type	Historical structure
Density	1 structure
Location/Coordinates	S29 50 02.5 E31 01 37.3
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is an dilapidated storage structure/facility(Figure 28). This industrial structure is probable one of the earliest buildings in Durban Yard together with sites: 16-21. However, the conditions of the structure are not as pleasing. The roof is completely ruined and some of the doors and windows are missing or damaged.	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities: 1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the structure will be unchanged during the depot upgrade Operation Phase: maintenance of depot		
	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		

Residual Impacts:

- The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.

Project component/s	Construction phase of the project		
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).		
Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe

Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).	ECO	Operational phase or during construction phase should the need arise.

Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.
Monitoring	ECO

Figure 28- Storage facilities

Site	DY-16
Type	Historical building
Density	1 structure
Location/Coordinates	S29 50 01.4 E31 01 37.9
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a historical building, probable of the same age with DY-16. The middle section of the building which looks to have been a single storey building seem to have been added on- now it has two floors. Note the difference in the type of bricks used (Figure 29). The same is true for the 2 end sections of the building. The additions to the building are most likely to be over 60 years because the same brick type is common throughout the site - Durban Yard depot. The building is in a better state than many other structures on site - Durban Yard.	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities:

1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the building will be unchanged during the depot upgrade

Operation Phase: maintenance of depot

	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive

Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		
Residual Impacts: • The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.		

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.

Project component/s	Construction phase of the project
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).
Project component/s	Operational phase of the project
Potential Impact	During future maintenance programmes

Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe
Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).		ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.		
Monitoring	ECO		

Figure 29- Mainline train cleaners facility building

Site	DY-17
Type	Structure
Density	1 structure
Location/Coordinates	S29 50 00.1 E31 01 38.6
Approximate Age (More than 60 0r Less than 60 years old)	Less than 60 years old
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is Durban Yard PRASA train operations and shunters building. The building looks to be a relative new industrial structure -most probable dating to the late 1970s or 1980s as these types of building designs are popular at the time (Figure 30). It is similar to DY-7 (Figure 20). Restoration activities are proposed on site.	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
		Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Note! – This is not a heritage site/resources - therefore there are no further actions in terms of heritage resources management recommended for it (Figure- 30). The proposed restoration of the building can proceed as planned.

Figure 30- Electric power generating structure

Site	DY-18
Type	Historical structure
Density	1 structure
Location/Coordinates	S29 49 58.0 E31 01 40.0
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a redundant workshop and parking (Figure 31) of the same age with site DY-15 (Figure 28) and sections of DY-16 (Figure 29).	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities: 1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the structure will be unchanged during the depot upgrade Operation Phase: maintenance of depot		
	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		

Residual Impacts:

- The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.

Project component/s	Construction phase of the project		
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).		
Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe

Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).	ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.	
Monitoring	ECO	

Figure 31 - Redundant workshop and parking

Site	DY-19
Type	Historical structure
Density	1 structure
Location/Coordinates	S29 49 56.2 E31 01 40.9
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)
Description: The site is a Transnet Tip Top store (Figure 32)of the same age with site DY-15 and sections of DY-16, and DY-18 .	

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed
Nature of Activities:							

1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the structure will be unchanged during the depot upgrade Operation Phase: maintenance of depot		
	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		
Residual Impacts: • The project will positively enhance the aesthetic appeal of the depot, its usability and		

effective functioning of the train system in Durban.

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.			
Project component/s	Construction phase of the project		
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).		
Project component/s	Operational phase of the project		
Potential Impact	During future maintenance programmes		
Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe
Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection		ECO	Operational phase or during construction phase should the need arise.

clause).			
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.		
Monitoring	ECO		

Figure 32- Transnet Tip Top store

Site	DY-20
Type	Historical structure
Density	1 structure
Location/Coordinates	S29 49 56.2 E31 01 40.9
Approximate Age (More than 60 0r Less than 60 years old)	Older than 60 years
Applicable Section of the NHRA, No 25 of 1999:	Section 34
Applicable Sections of the KZNHA, No.10 of 1997	Section 26 (1)
Applicable Sections of the KZNHB, 2008	Chapter 8 and section 29 (1)

Description:

The site is a long structure which looks to have been some form of running shed during its days (Figure 33). The site is definitely of the same age with DY-19, DY-18, sections of DY-16 and DY-15. Transnet Tip Top store (Figure 32)of the same age with site DY-15 and sections of DY-16, and DY-18 . Like these other mentioned sites the structure has some sort of asbestos/concrete roofing. Inside this massive structure a utility building has been added on (Refer Figure 12 and Figure 26). Old S.A.R coaches still stand inside this structure with significantly large roof tracilling (Figure 33).

Inside the structure the follow PRASA division are found: PRASA technical workshop; Material store; PRASA technical: future workshop; PRASA technical: simulation; PRASA technical proposed training centre.

- Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):

Field Rating	Grade	Impact	Impact Significance	Heritage Significance	Certainty of Impacts	Duration	Mitigation
GPC	3E	Localised	Low	Low significance	Probable	Construction & Operational phase	None proposed

Nature of Activities:

1. Construction Phase: construction and restoration of buildings in Durban Yard. However, the structure will be unchanged during the depot upgrade

Operation Phase: maintenance of depot

	WOM	WM
Probability	Probable (2)	Probable (2)
Duration	Short term(1)	Short term (1)
Scale	Local (1)	Local (1)
Magnitude/Severity	Low (2)	Low (2)
Significance	(8)Negligible	(8)Negligible
Status (positive or negative)	Positive	Positive

Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: None proposed for the current phase of the project - site to be unchanged (Figure 26)		
Cumulative impacts: Such impacts are expected with operational phases of the project		
Residual Impacts: • The project will positively enhance the aesthetic appeal of the depot, its usability and effective functioning of the train system in Durban.		

Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE: The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development footprint i.e. the Durban Yard PRASA/Transnet Depot.

Project component/s	Construction phase of the project
Potential Impact	There are no proposed upgrade activities within this site complex in terms of PRASA proposed Spatial Development Framework (Figure 26).
Project component/s	Operational phase of the project
Potential Impact	During future maintenance programmes

Activity/risk source	N/A		
Mitigation: Target/Objective	The site will probably be not be directly impacted, the Spatial Development Framework suggests that this buildings/structure will be unchanged (Figure 26)		
Mitigation: Action/control		Responsibility	Timeframe
Should PRASA or Transnet wish to demolish this building - it need to be mapped before it can be demolished (a permit will need to be applied for with Amafa because of the general protection clause).		ECO	Operational phase or during construction phase should the need arise.
Performance Indicator	The type of indicator used here will be Actionable Indicators – this will measure action/progress in terms of completion of the above objectives with the approval of the EMP against their actual implementation.		
Monitoring	ECO		

Figure 33 - ’Former running shed’

6. FIELD SURVEY RESULTS AND PROPOSED INFRASTRUCTURE

The field work conducted on the 31st May 2013 yielded 20 sites complexes of various sizes and age. All the sites yielded are industrial built environment landscape features, the predominant number of these structures is older than 6o years. Sites such as DY-15, sections of DY-16, DY-18, DY-19, DY-20, and sections DY-1 for part of the early industrial infrastructure of Durban Yard (Figures: 33, 32, 31, 29 & 28). The following sites were however not classified as historical site, because they are graded below the 60 year benchmark for historical built environment and landscape sites : DY-7, DY 11 and DY-17 (e.g. Figures: 30, 24 & 20). The rest of the sites are historical sites but of relatively recent age as compared to DY-15, DY-16 (sections) , DY-18, DY-20, and DY-1 (sections). Out of the recent historical structure, DY-12 is proposed to be demolished (Figure 25). There is another structure which was not identified by the survey, most probably covered by coaches/trains, which will be demolished too. The following structures are proposed for restorations DY-11 (Figure 24) and DY-17 (Figure 30). The rest of the sites will be unchanged - it its however, not known if there will be any minor restorative work such as painting, fixing doors and windows on these structure. For the scope of upgrade work to be done on sites refer to the site proposed Spatial Development Framework (Figure 36). All sites identified by the survey are mapped out in Figure 35 below. Based on the site grading, individual site significance and impact significance of the proposed development on the identified historical resources - the project will have a minimal impact on the resources identified within the project footprint. This is particular important for some of the earliest Durban Yard industrial infrastructure even though it is currently in a bad state. This would mean that most of the historical sites protected in terms of Section 34 of the NHRA, No. 25 of 1999; KZNHA, No.10 of 1997 (Section 26 (1)); and KZNHB, 2008 (Chapter 8 and section 29 (1)) are spared from destruction. For the two historical structures which are of very low significance Amafa would need to be informed of the move to destruct them. However, because these are merely control point cabins without an any value or potential to answering scientific and research question of the architectural vernacular or aesthetics of the Durban and KwaZulu-Natal railway history and industry - Amafa can possible exempt PRASA from permit application for structure such as DY-12. However, should PRASA wish to make demolitions on sites like DY-15, DY-16 (sections) , DY-18, DY-20, and DY-1 (sections) or any other sites classified as being historical in the current heritage study - PRASA should follow the route of normal permit application with Amafa where by each site will be full recorded and document, its vertical and horizontal axis mapped and/or recorded.

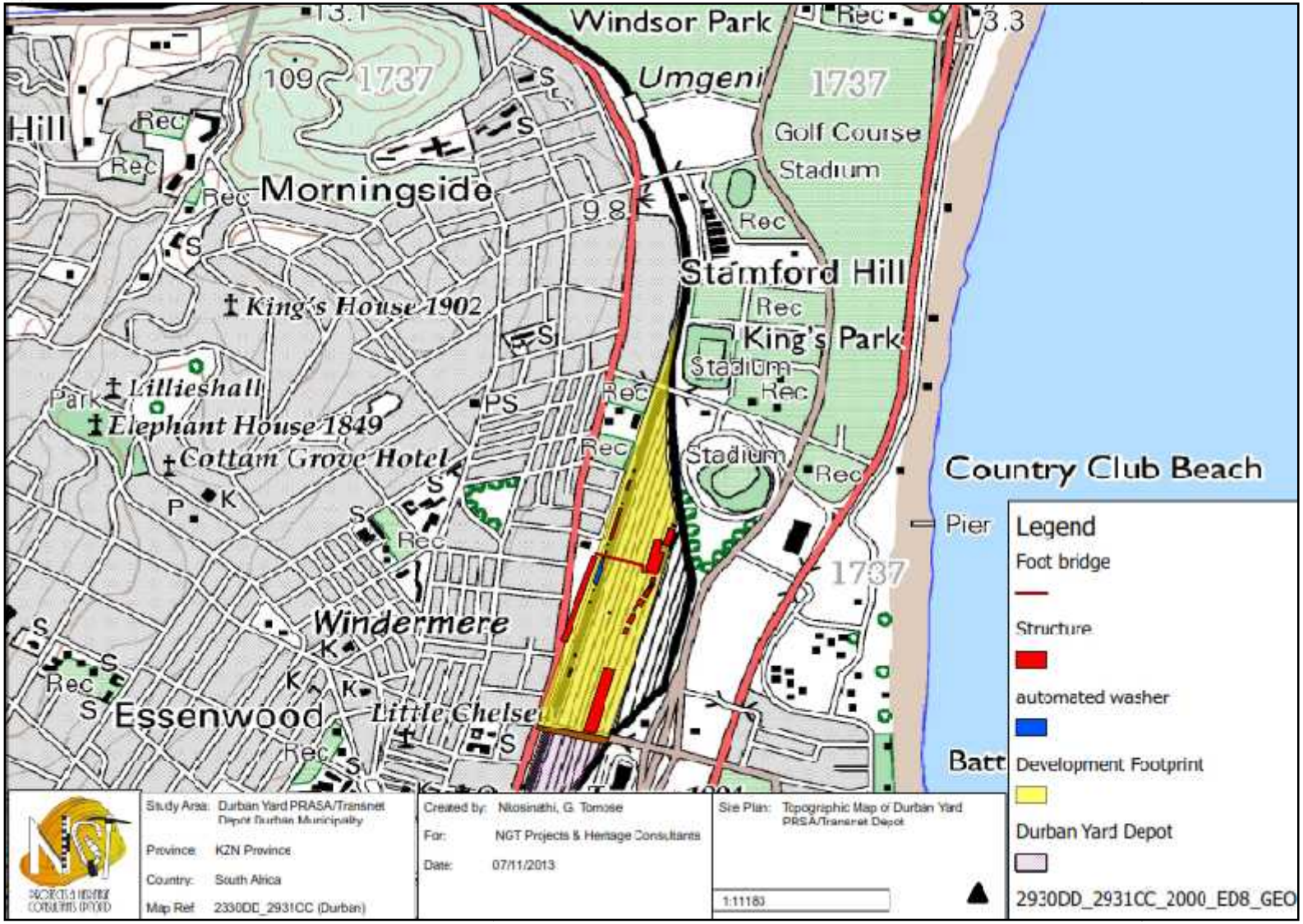

Figure 34- Distribution of sites identified by the current survey existing depot buildings, rail infrastructure (e.g. tracks etc), and overhead bridge.

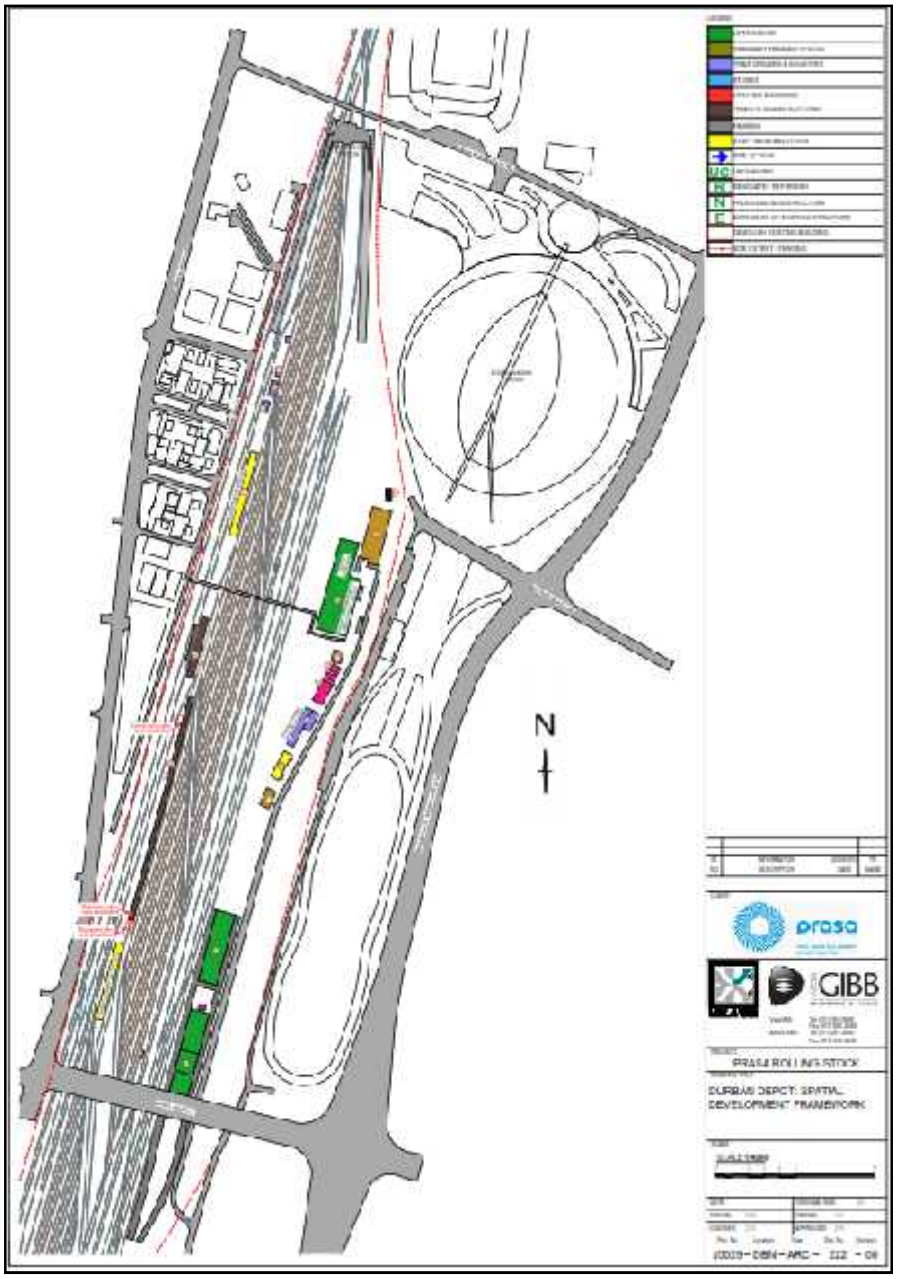

Figure 35- Spatial Development Framework - showing the proposed infrastructure at Durban Yard PRASA/Transnet depot against the existing infrastructure

7. CONCLUSIONS

The grading, assessment, evaluation of the identified sites (all industrial built environment and landscape features in form of buildings) within Durban Yard confirmed the held idea that Durban Yard is one of historic importance sites with regards to the founding, development and expansion of the railway industry in South Africa. It is also concluded that number of structures identified within Durban Yard are historical sites, based on their age (over 6o years) and as a result they protected are protected in terms of the NHRA, No. 25 of 1999. Section 34 of the NHRA, No.25 of 1999 and KZNHA, No.10 of 1997 (Section 26 (1)); and KZNHB, 2008 (Chapter 8 and section 29 (1)) are important in terms of general protection of these sites. Based on the above discussion (Section 6 of this report) it is concluded that the following sites are on the earliest industry period within Durban Yard:

- DY-15, (sections of) DY-16, DY-18, DY-19, DY-20, (and sections) of DY-1

The following sites are concluded to be of no heritage significance - they are not historical sites:

- DY-7, DY-11 and DY-17

The rest of the site are deemed to be historical sites and they include:

- DY-2 (which fall outside the development footprint), DY-3, DY-4, DY-5, DY-6, DY-8, DY-9, DY-10, DY-12, DY-13, and DY-15,

Based on site grading, individual site significance and the assessment of impact significance of the proposed development on the identified historical resources as defined in the site Spatial Development Framework (Figure 36) - it is further concluded that the project upgrade/maintenance will have a minimal impact on the resources identified within the project footprint. The proposed PRASA Durban Yard modernisation project will lead to improvement of Durban Yard depot and its associated infrastructure. Therefore in terms of heritage resources management there are no objections to the project proceeding as planned - provided that PRASA sticks the current proposed Spatial Development Framework of the Durban Yard depot and should it wish to demolish any of the structures deemed to be historical in nature it should apply for destruction permits with Amafa KwaZulu-Natali.

It is concluded that the project upgrade/maintenance will have a minimal impact on the resources identified within the project footprint. Therefore in terms of heritage resources management there are no objections to the project proceeding as planned

8. RECOMMENDATIONS

- It is recommended that Amafa' KwaZulu-Natali approves the project in terms of cultural resources management since there are no negative impacts of the proposed project on the identified historical resources sites located within Durban Yard depot.
- For the two historical structures which are of very low significance Amafa would normal need to be consulted for permission to destruct these sites. However, because these are merely control point cabins without an any value or potential to answering scientific and research question of the architectural vernacular or aesthetics of the Durban and KwaZulu-Natal railway history and industry - it is proposed that Amafa can possible exempt PRASA from permit application for these two structures which include DY-12.
- The following recommendation is made to PRASA regarding future management of the identified historical sites within Durban Yard depot. Should PRASA or Transnet wish to demolish any of the sites defined to be historical, it should apply for relevant permits with Amafa or should it wish to contribute to the conservation of some of these sites particularly those deemed to be of the earliest industrial development of the depot (in terms of their adoptive reuse as means of conserving them and enhancing their conditions) it should develop an Integrated Heritage Conservation Management Measure which will spell out clearly the types of alterations that can be done or not be done on individual sites. This process would include a detailed measure and recording of the vertical and horizontal axis of each of the buildings, floor plans and development of statement of significance of each building in terms of the architectural and historical vernacular within the broader framework of the railway infrastructure development.
- It should be noted that the current study was a Phase 1 HIA and it only involved the identification, recording, mapping, grading and development of heritage management measures for inclusion in the EMP document.
- Therefore, should PRASA or Transnet wish to carry out any other development on site other than those defined in the current Spatial Development Framework (Figure 36) - further studies, separate from this one will be required.
- In the cases where buildings or structure are proposed for demolition or alterations - Alteration and Demolition/Alteration Permits will need to be applied for with Amafa KwaZulu-Natal Built Environment and Landscape Office in terms of Section 34 of the

NHRA, No. 25 of 1999 and applicable provincial heritage legislations such as KZNHA, No.10 of 1997 (Section 26 (1)); and KZNHB, 2008 (Chapter 8 and section 29 (1)).

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