NGT ESHS Solutions

PROJECT TITLE:
REPORT FOR THE REFURBISHMENTS OF THE CALEDONIAN STADIUM IN PRETORIA, GAUTENG PROVINCE

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SPECIALIST REPORT:

Heritage Impact Assessment for the refurbishments of the Caledonian Stadium in Pretoria, Gauteng Province.

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E: Environment
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DECLARATION OF INDEPENDENCE

Miss. Cherene de Bruyn for NGT ESHS has compiled this report (See Appendix 1). 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 ESHS, a subsidiary of NGT , responsible for the implementation of environmental, socio-economic and heritage sustainability solutions was appointed by Antaeres to conduct an HIA and Conservation Management Plan (CMP), Palaeontological Impact Assessment (PIA) and proposition of Artworks for Memorialisation of the Site study for refurbishments of the Caledonian Stadium in Arcadia Pretoria, within the City of Tshwane Metropolitan Municipality (CoTMM), Gauteng Province. The CMP and the Artworks are to be completed on receipt of PHRA-G permit with conditions on the treatment of historic and heritage features on site. This HIA report is intended to inform the final architectural design and engineering report works in the refurbishment of Caledonia Stadium. This study is conducted independently in terms of Section 38 (3) and Section 34 (Built Environment) of the National Heritage Resources Act (NHRA), No. 25 of 1999.

The standard NGT ESHS HIA study - entailed conducting a detailed background information search of the receiving environment. The search assesses among other forms of data, previous studies conducted in and around the proposed study area or the development area. This also includes conducting an onsite investigation (survey) to identify and map out heritage resources on site and assess impacts of the proposed development on the identified heritage resources. Recommendations are then made with regards to how the identified heritage resources should be managed and/or mitigated to avoid being negatively impacted by development activities. Furthermore, recommendations are made on how the positive project benefits can be enhanced, to ensure a long-term strategy for the conservation and promotion of heritage resources, if any are found.

The survey of the Caledonian Stadium was conducted on Thursday, 7 February 2019. The survey was conducted by Mr Nkosinathi Tomose (Executive Director and CEO for - NGT (the parent company). The survey was conducted on foot. A vehicle was also used to access the site.

The Caledonian Stadium is identified to be older than 60 years old and fall under the automatic classification as heritage site and under the NHRA 25 of 1999 (i.e. Circa. 1903). During the survey historical buildings and heritage features such as gate posts, stone walls and matured trees were identified within the development footprint. No archaeological, burial grounds and graves were identified. In terms of the

South African Heritage and Resources Agency (SAHRA) Paleontological Sensitivity Layer the area falls within a region defined as moderate sensitivity area, therefore a desktop study is required for these finds.

Based on the results of literature review, field survey and the assessment of identified heritage resources the following conclusions and recommendations are made in terms of the National Heritage Act about the proposed development:

Conclusions:

Based on the results of literature review and the survey results the following conclusions are made:

- It is concluded that the project area near Arcadia, is located in a region rich in archaeology and heritage resources such as historic buildings and heritage features associated with the history and heritage of Pretoria.
- The Caledonian Stadium has a rich history related to the development of Professional Soccer/Football in South Africa. The Arcadia Shephard's Football Club was first established in 1903 and trained at the Caledonian Stadium. The team mostly consisted of players from the Arcadia area, hence the name Arcadia Shepard's. Later on the Arcadia Shephard's Football Club would also play an important role in the Apartheid Era, as they were the first club to have a multiracial team in the 1970's. As a result of this the Arcadia Shepard's team was banned from the Stadium, and only returned in 1997 when the ban was lifted.
- Several historical resources were identified in the project area and include:
    - Caledonian-01 (Clubhouse). The clubhouse is of medium to high significance and as such has heritage significance.
    - Caledonian-02 (Pavilion). The pavilion is of medium to high significance and as such has heritage significance.
    - Caledonian-03 (Sandstone boundary wall/fence). As one of the original historical features of the Stadium the stonewalls are of high significance and have heritage value
    - Caledonian-04 (smaller sandstone wall). The smaller sandstone walls are located within the Stadium premises and are of high significance and heritage value, they form part of the old stadium property.

- Caledonian-05 (Guard house) located near Francis Baard Street. The Guard house is contemporary and of low heritage value and has very little heritage significance.

- In terms of SAHRA Paleontological Sensitivity Layer, the project area is located in moderate sensitivity area (See PIA report).

Recommendations:

Based on the Limitations and Conclusions it is recommended that:

- Caledonian-01 (Clubhouse): A space in the Clubhouse should be developed as an area used to memorialise and explain the development of professional Soccer/Football in South Africa and Arcadia. This can be achieved through the display of team memorabilia (local and national), information boards about Soccer/Football, as well as visual media such as archival material including video, photographic material, newspaper and magazine articles talking about Soccer/Football in South Africa, the Arcadia Shepard's and possibly the 2010 FIFA World Cup hosted in South Arica. The Arcadia Shepard's logos and emblems should be kept and used in a visual display documenting the history of the Caledonian Stadium.
- Caledonian-02 (Pavilion). The Pavilion can be restored, and the refurbishments can proceed as planned. The cover (corrugated iron sheet roof) of the pavilion should be replaced with new material similar to what is on site since the current material is degrading and presents a risk.
- Caledonian-03 (Sandstone boundary stone walls): The original walls and gate posts should be retained and be kept and restored. The structural defects as shown in cracks should be repaired in accordance to structural engineering principles – the stone should be removed, the embankments behind the walls retained, the matured trees whose roots are affecting the structural integrity of the walls be removed following the acquisition of necessary permits from Department of Agriculture Forestry and Fisheries, and cement with similar grade as the existing should be used as far as possible. The graffiti and paint should also be removed from the wall and the walls washed with high pressure to extenuate their colour and appeal. The gates posts

at the entrance of the Stadium appears to be properly restored to originality in line with the overall aesthetic view of the Historical features of the Stadium wall.

- Caledonian-04 (smaller sandstone wall): The smaller sandstone wall found inside the stadium premises should also be restored to originality, where sandstone has been replaced with slate – an attempt should be made to remove the slate and replace with sandstone as original historical features.
- Caledonian-05 (Guard house). Since the Guard house is of low heritage significance the planned refurbishments can proceed as planned.

- It should be noted that some archaeological material, including artefacts and graves can be buried underground and as such, may not have been identified during the initial survey and site visits. In the case where the proposed development activities bring these materials to the surface, they should be treated as **Chance Finds.** Should such resources be unearthed it is recommended that, the prospecting activities be stopped immediately, and an archaeologist be contacted to conduct a site visits and make recommendations on the mitigation of the finds. SAHRA and PHRA-G should also be informed immediately on such finds.
- In terms of the SAHRA Paleontological Sensitivity Layer, the area falls within a region defined as a moderate sensitivity area. As such a desktop study was required (See PIA report).
- It is recommended that both the SAHRA and the PHRA-G grant the project a **Positive Review Comment** and allow the refurbishments of the Caledonian Stadium Pavilion and Clubhouse and the development of the proposed new facilities and sport fields in Arcadia to proceed as planned.

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LIST OF ABBREVIATIONS

ACRONYMS	DESCRIPTION
AUTHORITIES	
ASAPA	Association of South African Professional Archaeologists
CoTMM	City of Tshwane Metropolitan Municipality
ESHS	Environmental, Socio-Economic and Heritage Sustainability
NGT	Nurture, Grow, Treasure
PHRA-G	Provincial Heritage Resources Authority Gauteng
SADC	Southern African Developing Community
SAHRA	South African Heritage Resources Agency
DISCIPLINE	
CMP	Cultural Management Plan
CRM	Cultural Resources Management
ESA	Early Stone Age
EIAs	Environmental Impact Assessment
EMPr	Environmental Management Programme
EIA	Early Iron Age
ha	Hectares
HCMP	Heritage Cultural Management Plan Report
HIA	Heritage Impact Assessment
LIA	Late Iron Age
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
PIA	Palaeontological Impact Assessment
LEGAL	
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act

TERMS AND DEFINITIONS

Archaeological resources

These include:

- 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.

Palaeontological

This means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial.

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. Background Information of Project

NGT ESHS is a subsidiary of of NGT Holdings (Pty) Ltd (hereafter referred to as NGT), responsible for the implementation of environmental, socio-economic and heritage sustainability studies. NGT was appointed by Antaeres to conduct an HIA study (inclusive of Conservation Management Plan, Palaeontological Impact Assessment and proposition of Artworks for Memorialisation of the Site) for refurbishments of the Caledonian Stadium in Arcadia, within the City of Tshwane Metropolitan Municipality (CoTMM) Gauteng Province *(Figure 1 -2).*

The scope of work for Caledonian stadium includes:

- Refurbishment of the existing pavilion
- Refurbishment of the existing club house
- New multipurpose hall
- New caretaker house
- New 4x guard house
- New VIP concrete grandstand
- New media concrete grandstand
- Refurbishment of concrete seating around the football stadium
- New 2x practice field
- New paved parking
- New 4x drinking fountains
- New 2x multipurpose courts (Netball and basketball)
- New 2x multipurpose courts (Tennis and volleyball)
- New Change room
- New 2x ablutions
- New boom-gates and turnstile on all 4x entrances

The HIA investigated the potential impacts of the proposed project activities on heritage resources identified within the receiving environment. These features include stonewalls and gate posts forming part of the boundary wall along Pretorius Street (north), the pavilion and associated building such as

change rooms, the stone walls that extend south from the pavilion towards Francis Baard Street in the south. The overall objective of the HIA is to give advice on the management of the heritage resources within the project area and devise ways in which they should be incorporated as part of the development in terms of known heritage resources management measures in line with the NHRA, No. 25 of 1999.

1.2. Description of the Affected Environment

1.2.1. Land Use and History

The project area is located in Arcadia, in Pretoria within the CoTMM, situated in the Gauteng Province, South Africa *(Table. 1).* It is located in between the suburbs Sunnyside, Hatfield and Pretoria West. The area is mostly residential with several urban developments and small businesses located in the region. The total size of the development is 4,43 ha and over 5000m^2 and triggers and triggers an HIA. The Apies River is located to the West of the project area, while the Walker Spruit is located to the east.

1.2.2. Access

Access to the Project area from Johannesburg is mainly through the following roads *(Figure. 3):*

- M1
- N1
- N14
- M5
- Steve Biko Road
- Pretorius Street

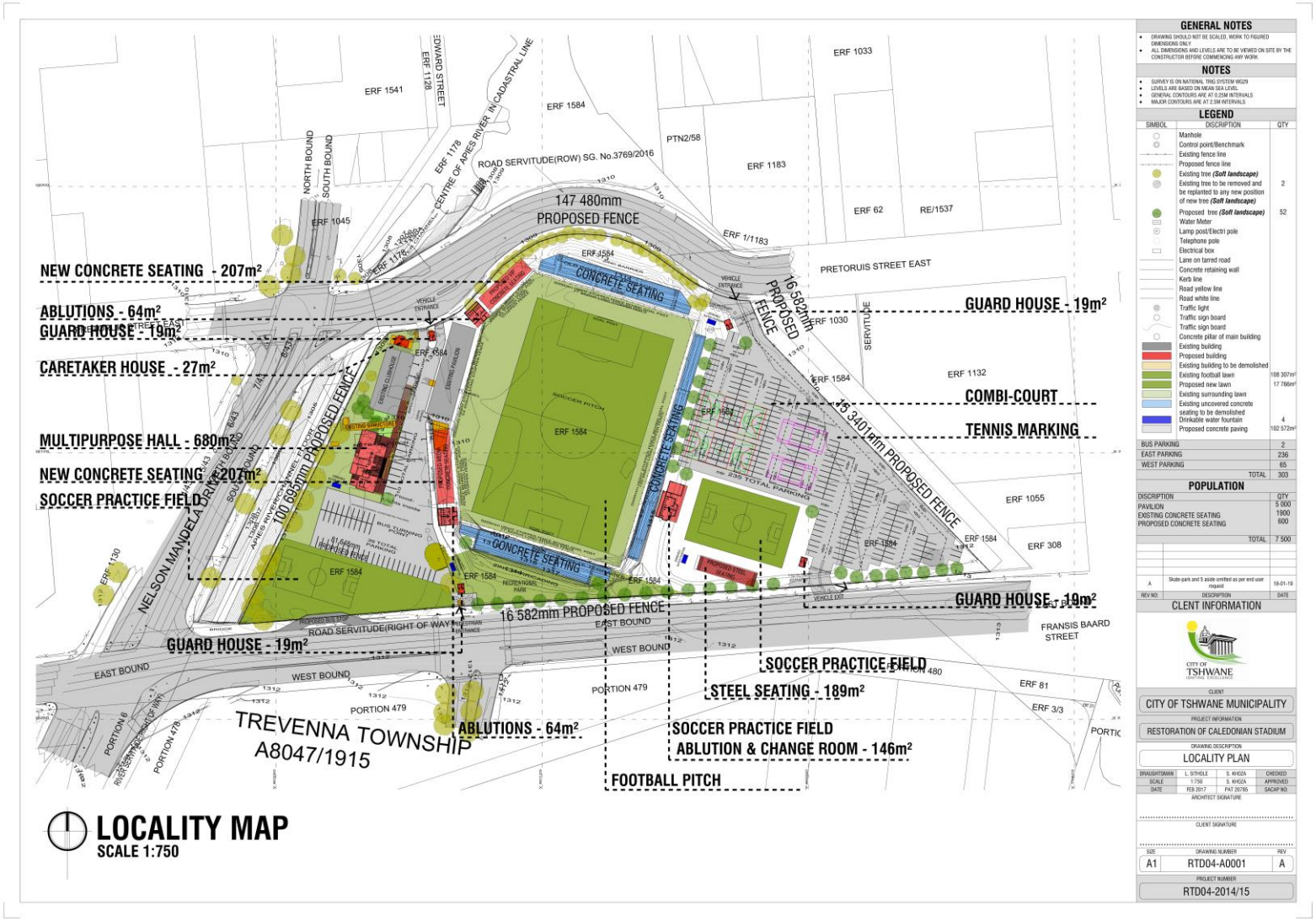

Figure 1: Architectural drawings of the Caledonian stadium (Source: KRMS PTY LTD)

E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

Figure 2: Google Earth map of the project area

E: Environment
S: Socio-Economics
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Table 1: Site Location and Property Information

Street names	Pretorius Street and Steve Biko Road
Size of Development Footprint	4,43 ha
Town	Pretoria
Responsible Local Authority	City of Tshwane Metropolitan Municipality
Ward	58
Magisterial District	Tshwane
Region	Gauteng Province
Country	South Africa
Site centre GPS coordinates	• 25° 44' 51.85" S • 28° 12' 6.54" E

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

The HIA is conducted in terms of Sections 38 (3) of the NHRA, No. 25 of 1999. This prescript of the Act Section 38:

"the responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (3) (a): Provided that the following must be included:

(a) The identification and mapping of all heritage resources in the area affected;

(b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;

(c) An assessment of the impact of the development on such heritage resources;

(d) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;

(e) The result of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;

(f) If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and

(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development."

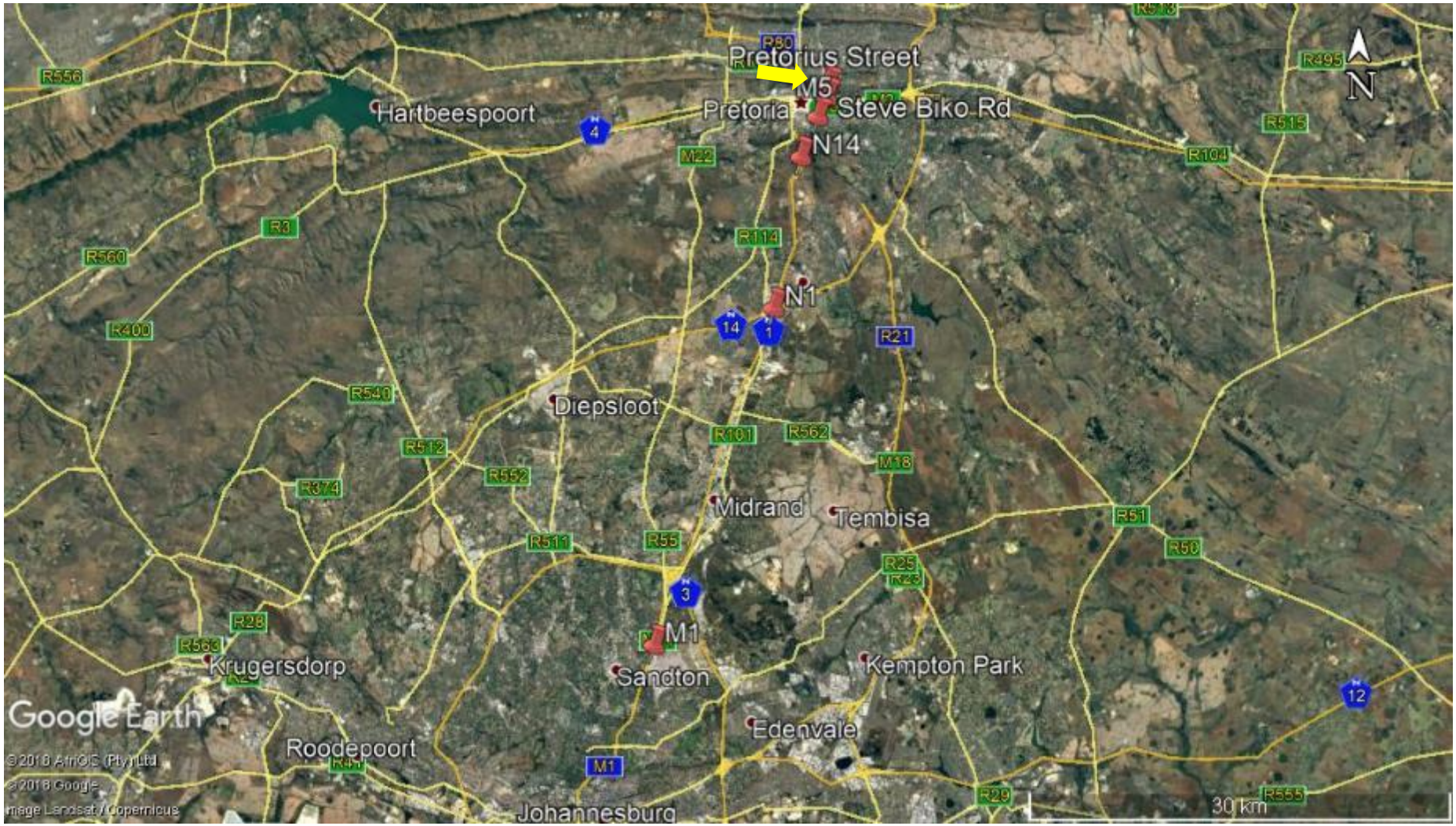

Figure 3: Google Earth image indicating access to the site (yellow arrow).

E: Environment
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Due to the nature of heritage resources on site – built environment and landscape features such as buildings older than 60 years, historic stonewalls and gate posts older than 60 years and matured trees that form part of the old landscape Section 34 of the NHRA, No. 25 of 1999 is triggered.

Antaeres appointed NGT as the lead cultural resources management (CRM) consultant to conduct and manage the HIA process. NGT appointed NGT ESHS to implement the project. Ms Cherene de Bruyn, Archaeologist and Heritage Consultant for NGT ESHS, conducted the HIA study for the proposed development. The appointment of NGT as an independent CRM firm is in terms of the NHRA, No. 25 of 1999.

1.4. Legal Requirements for Completion of the Study

The NHRA, No. 25 of 1999 sets norms and standards for the management of heritage resources in South Africa. Section 34 and 38 (3) of the NHRA, No. 25 of 1999 informs the current HIA study. Table 4 below gives a summary of all the relevant legislations that informed the current study.

Table 2-Legislation and relevance to this HIA Study

Legislation (incl. Policies, Bills and Framework)	
Heritage	• Heritage resources in South Africa are managed through the NHRA, No. 25 of 1999. This Act sets guidelines and principles for the management of the *nation estate*. • Section 34 becomes relevant in terms of structures. • While Section 35 becomes relevant in terms of archaeology and palaeontology. • Section 36 becomes relevant in terms of burial grounds and graves. • Section 38 of the Act becomes relevant in terms of nature of the proposed project in terms of developing the heritage impact assessment study.
Environmental	• The National Environmental Management Act (NEMA), No. 107 of 1998. • The cultural environment in South Africa is managed through Section 24 of the NEMA, No. 107 of 1998.

1.5. Limitations and Assumptions

Although a comprehensiveness physical survey was undertaken it should be noted that some of the archaeological material, including artefacts and graves can be buried underground and as such, may not have been identified during the initial survey and site visit. In the case where the proposed development activities bring these materials to the surface, they should be treated as Chance Finds. Should such resources be unearthed it is recommended that, the development activities be stopped immediately, and an archaeologist be contacted to conduct a site visits and make recommendations on the mitigation of the finds. SAHRA and PHRA-G should also be informed immediately on such finds. In this case no archaeological material of graves should be moved from the site, until the heritage specialist has been able to make an assessment regarding the significance of the site and archaeological material, which is also subject to SAHRA approval.

The following chapter outline the methodology used to assess the current site impacts and cumulative impacts that will result from the proposed project on the identified historic or archaeological sites.

2. METHODOLOGY

2.1. Approach to the Study

Cherene de Bruyn, Archaeologist and Heritage Consultant for NGT, is responsible for the compilation of the current HIA report. The Review and Quality Control (RQC) process involved reviewing the First Draft HIA (Revision 01) and revising the Second Draft (Revision 02); the RQC was completed by Mr Nkosinathi Tomose Executive Director and CEO NGT (also Principal Consultant for NGT subsidiaries **NGT ESHS** and **NGT-Infraco** (an infrastructure development entity specialising **Construction**, **Conservation** (rehabilitation and refurbishment of historic sites, buildings and public artworks), and **Civils**). The RQC is a standard process at NGT; in the case that the Director and Principal Consultant is responsible for the report – another consultant has to undertake the RQC process.

2.2. Step I – Literature Review (Desktop Phase)

Background information search for the proposed development took place following the receipt of appointment letter from the client. Sources used included, but not limited to published HIA studies, academic books, academic journal articles and the internet about the site and the broader area in which it is located. Interpretation of legislation (the NHRA, No. 25 of 1999) and local bi-laws forms, form the backbone for the study.

2.3. Step II – Physical Survey

The survey of the Caledonian Stadium was conducted on Thursday, 7 February 2019. The survey was conducted by Mr Nkosinathi Tomose (Executive Director and CEO for - NGT (the parent company)). The survey was conducted on foot. A vehicle was also used to access the site. The aim of the survey was to identify archaeological and heritage sites and resources within the area proposed for development activities as well as within the 500m radius:

- The survey of the proposed prospecting area, specifically the area, was conducted on foot and the site was accessed using a bakkie;
- The aim of the surveys was to identify archaeological, burial grounds and graves, and built environment heritage sites and resources in and around the project area;
- To record and document the sites using applicable tools and technology;

The following technological tools were used for documenting and recording identified resources on site:

- Garmin GPS (i.e. Garmin 62s) – to take Latitude and Longitude coordinates of the identified sites and to track the site.
- Canon SLR – to take photos of the affected environment and the identified sites.

2.4. Step III – Report Writing and Site Rating

The final step involves compilation of the report using desktop research as well as the physical survey results. Archaeological resources, graves and sites found in the project area is rated according to the site significance classification standards as prescribed by SAHRA. The first draft of this report was produced in 2018.

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

The following site significance classification minimum standards as prescribed by the SAHRA (2006) and approved by ASAPA for the Southern African Developing Community (SADC) region were used to grade the identified heritage resources or sites (*Table. 5*). This Statement of Heritage Significance does not imply exemption from any national, provincial or local authority legal or other regulatory requirement, including any protection or management or general provision in terms of the NHRA, No. 25 of 1999.

Table 3: Site significance classification standards as prescribed by SAHRA

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	High Significance	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	High Significance	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)	-	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP. B)	-	Medium Significance	Recording before destruction
Generally Protected C (GP. A)	-	Low Significance	Destruction

2.6. Impact Significance Rating in Accordance to Environmental Requirement:

Impact Significance Rating in will be completed and is guided by the requirements of the NEMA EIA Regulations (2014) (*Table., 5-8)*.

Table 4: Table indicating the impact significance rating.

Alternative No	List Alternative Names	
Proposal	Development	
Alternative 1	Development Area 01	
Alternative 2	Development Area 02	
Nature	-1	Negative
	1	Positive
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site
	5	Provincial / National (i.e. extends beyond 50 km from the site)

Duration	1	Immediate (<1 year)
	2	Short term (1-5 years),
	3	Medium term (6-15 years),
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure of natural process will reduce the impact after construction).
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected),
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected),
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way),
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease), or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease).
Reversibility	1	Impact is reversible without any time and cost.
	2	Impact is reversible without incurring significant time and cost.
	3	Impact is reversible only by incurring significant time and cost.
	4	Impact is reversible only by incurring prohibitively high time and cost.
	5	Irreversible Impact
Probability	1	Improbable (the possibility of the impact materialising is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),

	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),
Public feedback	1	Low: Issue not raised in public responses
	2	Medium: Issue has received a meaningful and justifiable public response
	3	High: Issue has received an intense meaningful and justifiable public response
Cumulative Impact	1	Low: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	2	Medium: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	3	High: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.
Irreplaceable loss of resources	1	Low: Where the impact is unlikely to result in irreplaceable loss of resources.
	2	Medium: Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	3	High: Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).
Degree of Confidence	Low	<30% certain of impact prediction
	Medium	>30 and < 60% certain of impact prediction
	High	>60% certain of impact prediction
Priority	Ranking	Prioritisation Factor
3	Low	1,00
4	Medium	1,17
5	Medium	1,33

6	Medium	1,50
7	Medium	1,67
8	Medium	1,83
9	High	2,00
Phase		
Planning		
Construction		
Operation		
Decommissioning		
Rehab and closure		

Table 5: Impact Rating table with impact mitigation.

IMPACT DESCRIPTION		PRE – MITIGATION						POST – MITIGATION								IMPACT PRIORITISATION		
Impact	Phase	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Pre-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER	Confidence	Public response	Cumulative Impact	Irreplaceable loss
1. Heritage Impact Ratings	Planning	-1	3	2	2	2	5	-11,25	-1	3	1	2	2	4	-8	High	1	2	1
								0	-1						0				
								0							0				

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Table 6: Risk assessment.

	Impact Name					
	Alternative					
	Phase					
	Environmental Risk					
	Attribute	**Pre-mitigation**	**Post-mitigation**	**Attribute**	**Pre-mitigation**	**Post-mitigation**
	Nature of Impact			Magnitude of Impact		
	Extent of Impact			Reversibility of Impact		
	Duration of Impact			Probability		
	Environmental Risk (Pre-mitigation)					
	Mitigation Measures					
	Heritage Risk (Post-mitigation)					
	Degree of confidence in impact prediction:					
	Impact Prioritisation					
	Public Response					
	Cumulative Impacts					
	Degree of potential irreplaceable loss of resources					
	Prioritisation Factor					
	Final Significance					

E: Environment
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Table 7: Final Significance Ratings

SIGNIFICANCE RATINGS	
Value	**Description**
< -10	Low Negative (i.e. where this impact would not have a direct influence on the decision to develop in the area)
≥ -10 and < -20	Medium Negative (i.e. where the impact could influence the decision to develop in the area)
≥ -20	High Negative (i.e. where the impact must have an influence on the decision process to develop in the area)
< 10	Low Positive (i.e. where this impact would not have a direct influence on the decision to develop in the area)
≥ 10 and < 20	Medium Positive (i.e. where the impact could influence the decision to develop in the area)
≥ 20	High Positive (i.e. where the impact must have an influence on the decision process to develop in the area)

3. BACKGROUND LITERATURE REVIEW: ARCHAEOLOGY

The southern Africa archaeology is divided into the Stone Age, Iron Age and the Historical Period. During these periods diverse groups of people settled on the southern African landscape. Several archaeological sites have been identified in the Gauteng Province through HIA and Archaeological Impact Assessment (AIA) studies as well as academic research *(Table 8-9 and Figure. 4-5).*

Table 8: Previous HIA and AIA reports conducted in and surrounding the proposed project area as recorded on the SAHRIS database

SITE NO.	AUTHOR/YEAR	TOWN	SITE	SAHRIS ID
1.	Van Schalkwyk et al., 1992.	Pretoria	The Lukas Bronkhorsthuis in Die Fonteinedal	MAPID_02343
2.	Van Schalkwyk, J. & Moifatswane, S. 1993.	Pretoria	Farm Groenkloof 358 JR	MAPID_02342
3.	Van Schalkwyk, J. 1994.	Pretoria Central	Church Street	MAPID_02341
4.	Van Schalkwyk, J. 1995.	Pretoria	Melrose House	-
5.	Huffman, T. 1997.	Pretoria	Pretoria South-East Sports Complex	MAPID_02906
6.	Teichert, F. 1999.	Pretoria	Medunsa, Klipfontein 268 JR,	-
7.	Roodt, F. 2002.	Pretoria	Lotus Gardens	MAPID_00513
8.	Kusel, U. 2003.	Pretoria	Farm Rietfontein 375 JR	MAPID_00520
9.	Pistorius, J. 2007.	Pretoria	Bryntirion Estate	MAPID_00316
10.	van der Walt, J. 2008.	Pretoria	Roodeplaat Nature Reserve	MAPID_02248
11.	van Schalkwyk, J. 2009.	Pretoria	Portion 330, Doornkloof 391JR	-
12.	Van Schalkwyk, J. 2012.	Pretoria	Fort West	-
13.	Miller, S. 2013.	Pretoria	Church Square	4150
14.	Pelser, A. 2013.	Pretoria	Salvokop Township	6864
15.	Clarke, N. 2014	Arcadia	Loftus Park, Pretoria Erf 414/418 1552 And Portion 397	3232
16.	Paterson, A. 2014.	Brooklyn	Erf R/783, 191 William Street	-
17.	Van Vollenhoven, A. 2014.	Pretoria	Voortrekker Monument	6447

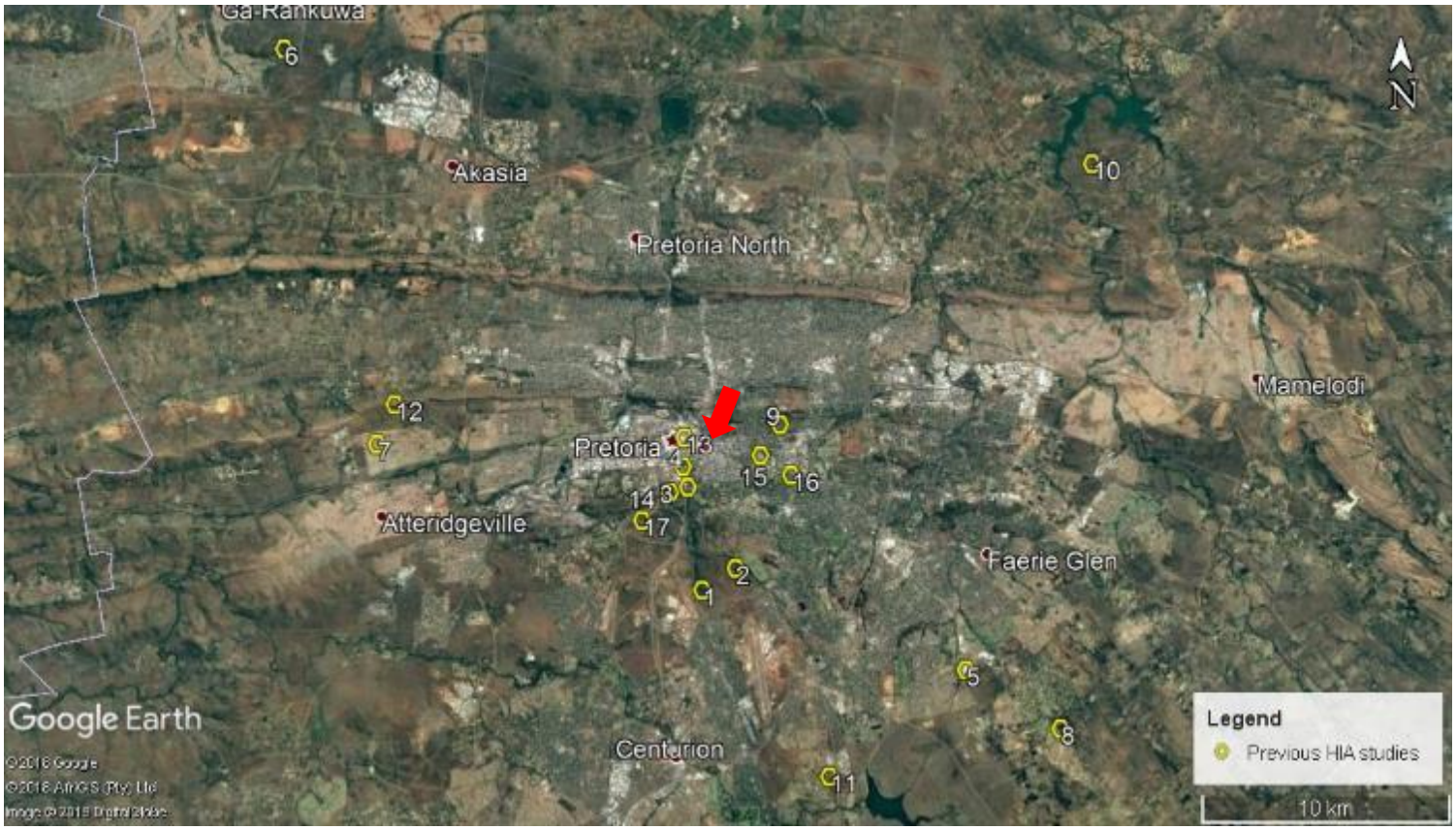


Figure 4: Previous HIA and AIA studies conducted in relation to the project area (red arrow)

3.1. Stone Age

The Stone Age is divided into the Early Stone Age (ESA) (± 2 Ma to ± 300 ka), the Middle Stone Age (MSA) (± 300 ka to ± 40 ka) and the Later Stone Age (LSA) (± 40 ka to ± 2 ka). The Stone Age refers to humans that mainly used stone as their technological marker. The ESA is characterized by two technological industries which are the Oldowan (± 2 Ma to ± 1.5 Ma) and Acheulean (± 1.5 Ma to 300 ka (Klein 2000; Lombard *et al*., 2012). The Oldowan industry is characterised by flakes produced from pebbles, cobbles and percussive tools (Klein 2000; Roche *et al*. 2009; Birkholtz 2011). In current debates two species of human ancestors, an early form of *Homo* and *Paranthropus robustus* have been identified who are thought to have been skilled enough to craft these stone tools (Esterhuysen & Smith 2007).

The Acheulean industry is characterised by large hand axes, cleavers and other bifacial tools (Klein 2000). In South Africa this stone tool complex is associated to *Homo ergaster.* In South Africa the Acheulean stone tool complex is often associated with *Homo ergaster,* who compared to modern humans in stature, brain size and body as well as facial proportions (Esterhuysen & Smith 2007). Unlike most places in South Africa, the Gauteng Province has unearthed significant evidence associated to the ESA period.

The Gauteng Province hosts one of the most significant heritage sites in the world *(Table. 9),* the Cradle of Humankind. The site provides researcher's the opportunity to understand more about past people's heritage, human evolution, palaeoenvironments and paleoclimates. This information can aid in understanding the worlds' social and cultural dynamics and predicting future environments and climates. The sites are namely: Sterkfontein located approximately 30 km away from the study area where some of the prominent skeletal remains such as Mrs Ples and Acheulean and Oldowan stones tools have been found (Mitchell 2002; Reynolds & Kibii 2011); Rising Star Cave a site where several hominin species such as *Homo Naledi* was found (Berger *et al.,* 2015); Swartkrans where Oldowan stone tools where excavated (Sutton 2012); Roodekop where two ESA sites as well as mixed MSA/ LSA occurrences were reported (Van Ryneveld 2015); and Farm Kaalfontein (366JR), near the Willem Prinsloo Agricultural Museum, yielded some of the oldest and largest Stone Age implements in South Africa (Kruger 2016) *(*see *Table. 9).*

The MSA is widely debated to be the phase that marked a change in hominin species to anatomically modern humans (Wadley 2007). Unlike hominin species, these modern humans manufactured a wider range of tools with technologies more advanced than those from earlier periods. This enabled skilled hunter- gatherer bands to adapt to different environments. Henceforth, rock shelters and caves were used for occupation and reoccupation over very long periods of time (Van Schalkwyk 2016). Evidence of ochre and ostrich water flasks found in MSA sites across southern Africa inform archaeologists about the emergence of symbolic behaviour and distinctive stone tools yielded evidence that this region is the origin of cognitive modern humans. The MSA period marked a change in stone tool technological techniques from the Prepared Core Technique to the Micro Lithics Technique, which became a dominant feature or trait in the LSA (Wadley 2007; Du Piesanie 2014). A greater variety of tools with diverse sizes and shapes appeared by 250 000 BP. The MSA stone tool assemblage include blades, flakes, scrapers and pointed tools that could have been hafted and used as spears or arrowheads (Wadley 2007; Birkholtz 2011; Du Piesanie 2014). According to Tomose (2013), other archaeological site traits associated with the MSA and

modern human behaviour can be seen in the early forms of symbolism in form of inscriptions or markings which can be defined as an early form of art in southern Africa. Moreover, the adoption of the use of fire and evidence of fossil bones are further traits that can be associated with the MSA and modern humans (Tomose 2013). In the Gauteng Province, evidence of this period has been excavated at Primrose Ridge area in adjacent Germiston; Henley-On-Klip south of Germiston (Pelser 2015); Swartkrans and at Melville Koppies (Bergh 1999) (*Table. 9 and Figure. 5*).

Table 9: Archaeological sites located in the Gauteng Province

NO.	ARCHAEOLOGICAL SITE	TYPE OF SITE	SAHRIS ID
1.	Arkleton, 852 Schoeman Street, Arcadia, Pretoria	Historical Building	26646
2.	Broederstroom	Iron Age	26950 26955 25266 39395 108214
3.	115 Charles Street, Brooklyn, Pretoria	Historic Dwelling-House	26716
4.	Coopers Cave	Early Stone Age	5528 3042
5.	Drimolen Cave	Early Stone Age	2949
6.	Dutch Reformed Church, Kirkness Street, Pretoria East, Pretoria	Historical Building	26726
7.	145 Eastwood Street, Pretoria	Historical Building	29761
8.	Faerie Glen-Wapadrand Country Estate 01	Iron Age	45093
9.	Farm Kaalfontein (366JR)	Early Stone Age	MAPID_02267
10.	Fort Klapperkop, Groenkloof, Pretoria	Battlefield Building (Historical Building)	26699
11.	Fort Schanskop, Groenkloof, Pretoria	Battlefield Building (Historical Building)	26668
12.	Freedom Park	Memorial (World War I, World War II as well as during the apartheid era)	93204
13.	Gladysvale Cave	Early/ Middle Stone Age	6283
14.	Haasgat	Early Stone Age	3597 4920 6712

NO.	ARCHAEOLOGICAL SITE	TYPE OF SITE	SAHRIS ID
15.	Hatherley 311 JR	Iron Age	89624
16.	Henley-On-Klip	Middle Stone Age	105242 34776
17.	Jeppe High School for Boys	Historical building	26923
18.	Klipriviersberg Nature Reserve	Iron Age	2766 5605
19.	Kromdraai	Early Stone Age	4154 4564
20.	Kruger House, Church Street West, Pretoria	Historical building	26718
21.	Leenhoff House, 799 Schoeman Street, Arcadia, Pretoria.	Historical building	26697
22.	Lion House, 20 Roberts Avenue, Kensington,	Historical building	26892
23.	Magsa Flats, 734 Arcadia Road, Arcadia, Pretoria	Historical building	26652
24.	Malapa	Early Stone Age	4771
25.	Maropeng	Early Stone Age	3035 5143 4937
26.	Mea Vota, 62 Rissik Street, Sunnyside, Pretoria	Historical building	26689
27.	Melville Koppies	Middle/ Late Stone Age, Iron Age	1526
28.	Melrose House, 275 Jacob Mare Street, Sunnyside, Pretoria	Historical building	26717
29.	Meyersdal Nature Estate	Iron Age	44807
30.	Modderfontein	Iron Age	46048
31.	Moerdyk House, 274 Pomona Street, Muckleneuk, Pretoria	Historical building	26698
32.	Mooiplaats 367JR	Iron age	94485
33.	Motsetsi Cave	Early Stone Age	2464
34.	Old Arts Building, University of Pretoria, Pretoria	Historical building	26725
35.	Old Merensky Library, University of Pretoria, Lynnwood Road, Pretoria	Historical building	26709
36.	Olifantsvlei	Iron Age	34927
37.	Oost-Eind Primary School, 70 Meintjies Street, Sunnyside, Pretoria	Historical building	26654
38.	Orange Court, Arcadia, Pretoria	Historical building	26712

NO.	ARCHAEOLOGICAL SITE	TYPE OF SITE	SAHRIS ID
39.	Pioneer Museum, Silverton, Pretoria	Historical building	26702
40.	Platberg	Late Iron Age	16490- 16508 19181- 19197 26272 32491
41.	Plovers Lake	Middle Stone Age	2462 2262
42.	Portion 22 of Brakfontein 399 JR, Rooihuiskraal Battlefield, Verwoerdburg, Pretoria	Battlefield (Historical Period)	26710
43.	Primrose Ridge	Middle Stone Age	9066
44.	Redan	Late Stone Age	1599
45.	Rietfontein	Iron age	33792
46.	Rietvlei Nature Reserve	Iron Age	35116
47.	Rising Star Cave	Early Stone Age	11621 11598
48.	Rondegeluk, Pretorius Street, Pretoria	Historical building	26677
49.	Roodekop	Early/ Middle/ Late Stone Age	35099-35106
50.	Sammy Marks and Kynoch Building, Church Street, Pretoria	Historical building	26711
51.	Scott House, Kensington	Historical building	26850
52.	Sterkfontein Caves	Early/Middle Stone Age	6620 4640 2752
53.	Swartkrans Cave	Early/ Middle Stone Age	25281
54.	Suikerbosrand	Iron Age	26932
55.	Swavelpoort	Iron Age	94515
56.	Tweefontein	Iron Age	42339
57.	Vlakfontein	Late Iron Age	24905 25718 32458 32382 41218- 41222 45054

NO.	ARCHAEOLOGICAL SITE	TYPE OF SITE	SAHRIS ID
			90446
58.	Voortrekker Monument	Historical building	26660
59.	Wonder Caves	Early Stone Age	5014
60.	Zwartkoppies	Iron Age	44785

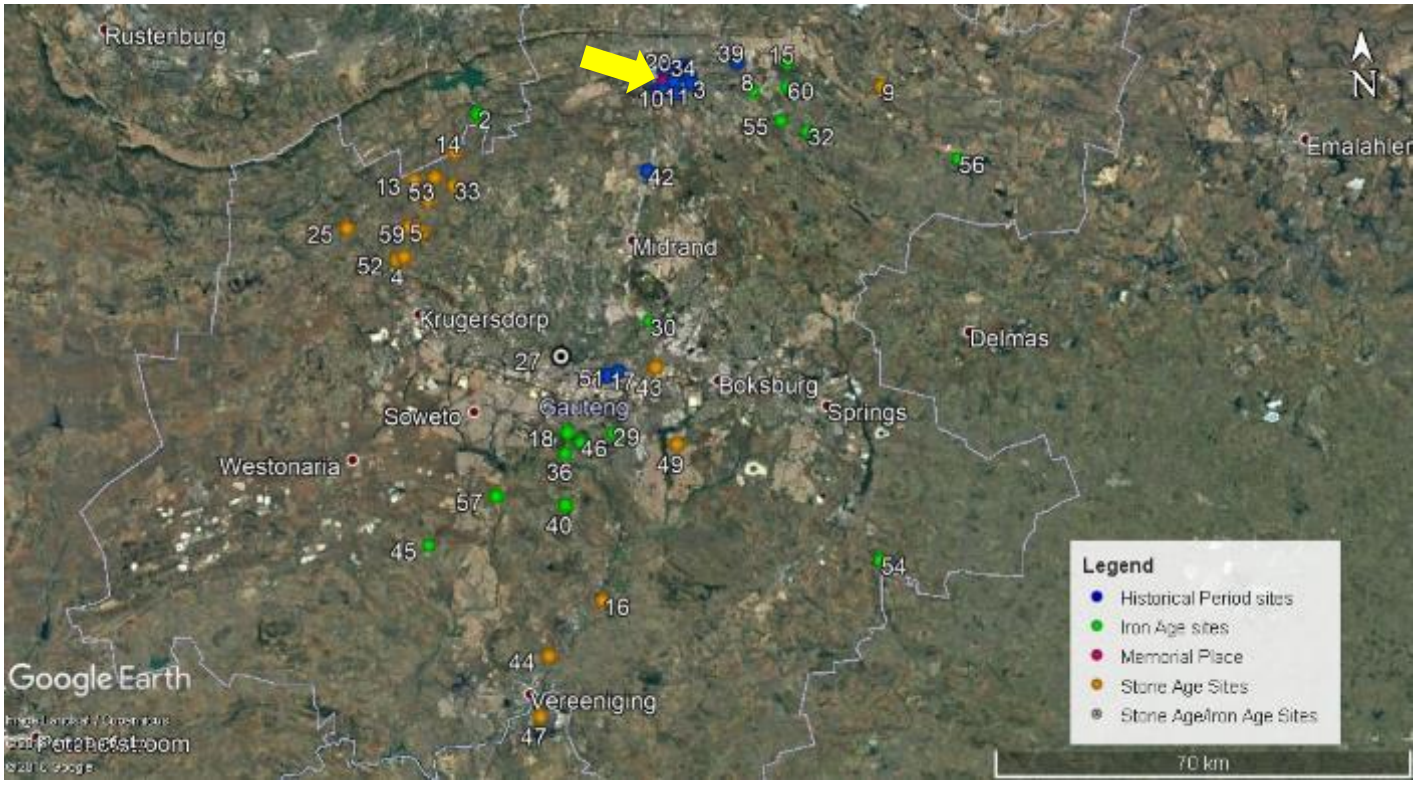


Figure 5: Google Earth image showing project area (yellow arrow) in relation to other archaeological sites in the surrounding areas.

The Later Stone Age (LSA) is the third phase identified in South Africa's archaeological history. It incorporates the period from 25 000 years BP. up to the Iron Age, Historical Periods and contact between hunter-gatherers and Iron Age farmers or European colonists. The LSA is associated with modern humans and is characterised by microlithic stone tools, flakes and scrapers from industries such as Smithfield and Robberg (Binneman 1995; Birkholtz 2011; Lombard *et al.,* 2012). Moreover, the LSA is associated with rock engravings and rock paintings (Mitchell 2002; Wadley 2007).

There was also a development of an economic system, whereby hunter-gatherers inland hunted fauna and gathered plants which can be seen by seed remains in archaeological assemblages. Furthermore, evidence of symbolic behaviour has been found in southern African archaeological sites during this time. Symbolic behaviour of LSA period is shown by deliberate burial (Hall 1990), decorating using ostrich eggshell beads and the use of ochre (Hall & Binneman 1987). Within the Gauteng Province, LSA sites have been recorded in Melville Koppies; and LSA rock art sites are found across the landscape of the Magaliesberg area, to the north and east of Mamelodi, and in Redan (Bergh 1999; Tomose 2013; Kruger 2016).

3.2. Iron Age

The Iron Age is divided into the Early Iron Age (EIA) (AD 200 – 900), the Middle Iron Age (MIA) (AD 900 – 1300), and the Late Iron Age (LIA) (AD 1300 – 1840). The Iron Age is characterised by farming communities who domesticated animals, cultivated plants, produced various ceramic vessels, smelted iron for weapons and manufactured tools (Tomose 2013; Kruger 2016). There is also evidence of small-scale mining of copper, iron and gold in the northern areas of Southern Africa (Freide 1980). The Iron Age groups migrated with their material culture and it can be observed in the archaeological record. The material culture expresses the identity of the groups as it forms part of the group's distinct patterns and cultural symbols (Huffman 2002, 2007; Kruger 2016). Ceramic style is used in Iron Age archaeology to distinguish the different Iron Age groups that lived in the southern African landscape.

The EIA is characterised by the first settlements of Bantu farming communities in southern Africa (Badenhorst 2010). These farmers mainly cultivated plants, herded domestic animals primarily sheep and goats, and produced metal as well as ceramic vessels. Furthermore, these farmers lived in houses located on valley floors in the eastern regions of the country (Badenhorst 2010; Tomose 2013), to mainly cater subsistence for their crops and livestock. Other Iron Age traits include stonewalls, pits and burials, as well as cattle dung (Tomose 2013). During the EIA, three streams of pottery are identified in Africa, namely: the Kalundu Tradition which is referred as the western stream, the Kwale Branch which is the eastern stream, and the Nkope Branch which is the central stream (Huffman 2007a). Both the Nkope and Kwale streams form part of the Urewe Tradition (Mitchell 2002; Huffman 2002, 2007a), which can be traced back to east Africa (Boeyens 2003). Several ceramics that are associated with the EIA have been found in areas surrounding Pretoria and Johannesburg as well as the region between Musina and Nelspruit, such

as the Mzonjani facies (AD 450 – 740) of the Kwale Branch and Urewe Tradition. This facies is characterised by punctuates on the rim and spaced motives on the shoulder (Evers 1975, 1977; Huffman 2007b).

The MIA is a period that is mainly focussed in the Mapungubwe region, in southern Africa. The inhabitants that lived in the Mapungubwe region were mainly farmers and traders of gold. The MIA saw an increase in the population size of the southern African communities such as those who settled at Mapungubwe (Badenhorst 2010). This was brought on by the success of the established trading networks of ivory and gold for goods such as beads and cloth in the trans-Indian Ocean (Badenhorst 2010).

The LIA is mainly characterised by the domestication of cattle, hilltop settlements and the making of ceramics. Studies conducted on the LIA classification of stone wall settlement patterns have been done by Maggs (1976), Mason (1986), and Huffman (2002). Mason (1968) focused his research on stone wall sites located in the Magaliesberg and Johannesburg region, it is also in this area that the 19th century Tswana town, Marothodi is located (Anderson 2009). Mason (1986) published a review of his stone wall settlement types following more research that was conducted in the area. It is believed to be the period when Sotho-Tswana speaking groups migrated from east Africa to southern Africa due to climatic conditions in the region (Boeyens 2003). Ceramics of the Moloko Branch are associated with the Sotho-Tswana groups (Evers 1983; Huffman 2002; Mitchell & Whitelaw 2005; Anderson 2009). The abundance of Moloko ceramic style of the Sotho-Tswana groups found in the Limpopo Province and Botswana regions indicates that this ceramic style replaced the earlier Eiland ceramics around (AD 1000-1300) (Mitchell 2002; Boeysens 2003; Huffman 2007b). This is evidenced by tracing the Moloko ceramics back to the EIA of the Urewe Tradition (Boeyens 2003; Huffman 2007b).

Huffman (2002) was able to identify three Stone Settlement basic types of LIA sites, all of which being of the Central Cattle Pattern (CCP). These include; firstly, Group I- which is associated with the southern Sotho-Tswana BaFokeng group and dates to the period AD1500-1650. Huffman (2002) calls these type of sites Type N settlements and they are identified by circular periphery stone walls. Secondly, Group II- which is associated with the western Sotho-Tswana BaKwena group and dates to the period AD1650-1820. These sites are identified by circular periphery stone walls and are complemented by single homestead and cattle outpost sites. Lastly, Group III- like Group I is associated with the southern Sotho-Tswana BaFokeng group, but dates to the period AD1650-1820. These sites are also called Type N settlements and

are also identified by circular periphery stone walls. However, unlike Group I, Group III's sites are larger and more complex. Similar to Group II, Group III's Stone Settlement sites have single homestead and cattle outpost sites (Huffman 2002). In the Gauteng Province, Group III sites dominate in the Klipriviersberg Nature Reserve area, with a few Group II sites identified (Van Ryneveld 2015).

The finds of stone walls and ceramics that are associated with Sotho-Tswana groups showed that during the LIA period, the central highveld was occupied by the Sotho-Tswana people (Huffman 2002; Anderson 2009). Moloko ceramics were found in Vlakfontein, south of Johannesburg. Furthermore, stone wall sites were found in Magaliesburg, the area where Marothodi, a 19th century Tswana town was located (Anderson 2009). Several LIA ceramic styles have been found throughout the Gauteng Province *(Figure. 6).* Ceramics of the Ntsuanatsatsi facies (AD 1450 to 1650) of the Blackburn Branch and Urewe Tradition, have been found near the Potchefstroom and Johannesburg regions (Mason 1986; Huffman 2007b). Ntsuanatsatsi facies are characterised by broad band stamping in the neck with stamped arcades on the shoulder (Huffman 2007b). The Uitkomst facies (AD 1650 – 1820) of the same branch is seen as the successors to the Ntsuanatsatsi facies and contains elements of both Nguni (Ntsuanatsatsi facies) and Sotho-Tswana speakers (Olifantspoort facies) pottery styles (Huffman, 2007b). They are characterised by stamped arcades and blocks of parallel incisions and cord impressions, which represents contact between these two groups.

Uitkomst ceramics are located to the north of the Potchefstroom region and in the Gauteng region (Huffman, 2007). The Olifantspoort facies (AD 1500-1700) of the Moloko Branch has been found around the Potchefstroom, Rustenburg and Pretoria regions (Mason 1986; Mitchell 2002; Huffman 2007). Mason (1974) has also found pottery similar to the Olifantspoort facies on the slopes of Platberg, near Klerksdorp. Olifantspoort pottery is characterised by "multiple bands of fine stamping and narrow incision separated by colour" (Huffman 2007b). Buispoort ceramics (AD 1700 – 1840), of the Moloko Branch, have been found to the north of Potchefstroom and in the Gauteng Province (Mason 1962, 1986; Boeyens 2000; Huffman 2007). Buispoort ceramics are characterised by "rim notching, broadly incised chevrons and white bands" (Huffman 2007a).

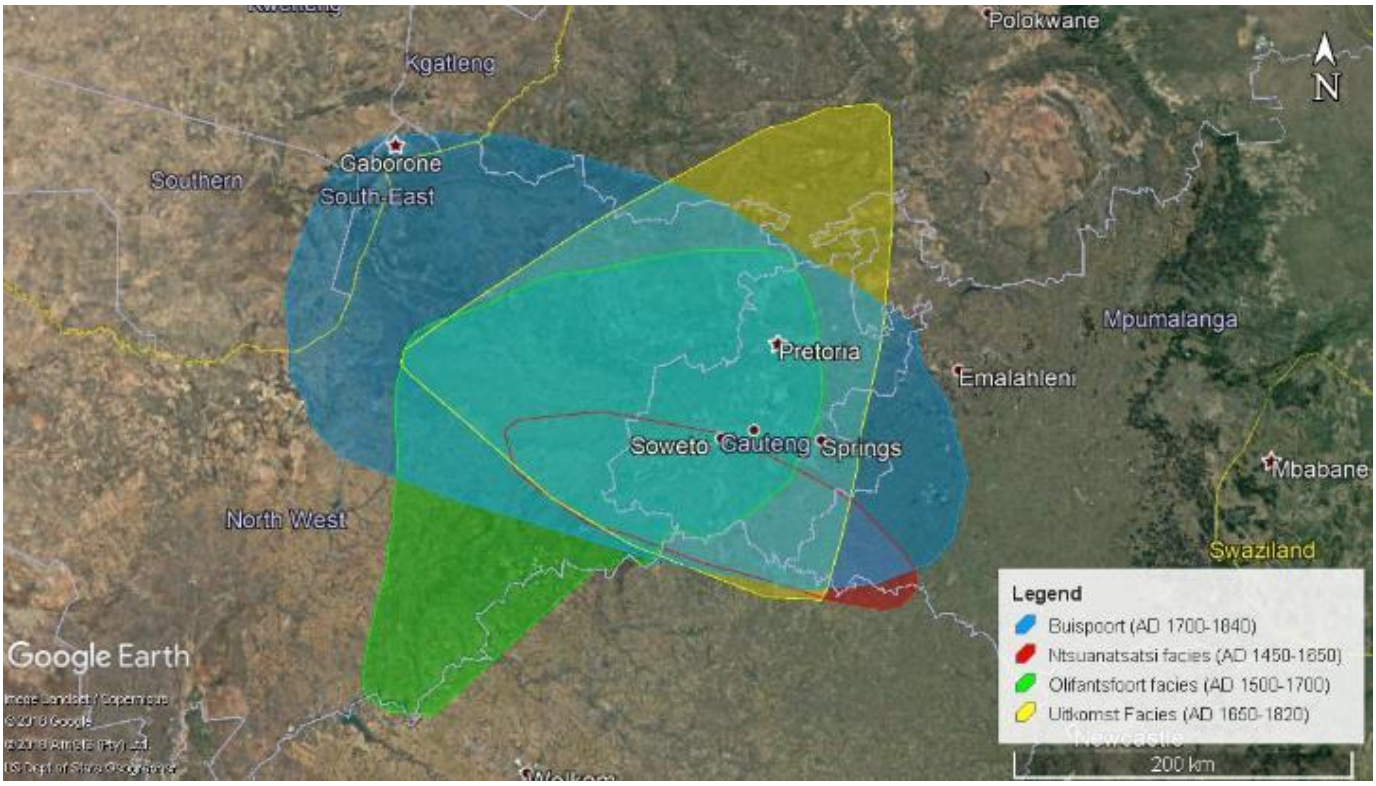


Figure 6: Iron age ceramic sequences found throughout the Gauteng Province.

In the Gauteng Province, evidence of Iron Age habitation can be found at various places including the stone-walled sites on the Klipriviersberg Nature Reserve (more than 100 individual sites), Melville Koppies, Suikerbosrand (see *Table 2*), Lonehill, Bruma Lake and Hearn Drive (Van Schalkwyk 2016). Moreover, there is evidence of LIA iron smelting in the Broederstroom, a site near Hartbeespoort Dam (Friede 1980).

3.3. Historical Period

The Historical Period dates from AD 1600 and is generally the period related to colonial settlement in South Africa. During the Anglo-Boer war several battles took place in and around the Pretoria region. During 1815 to 1840 Mzilikazi, a Zulu who departed from Shaka Zulu, migrated with his followers north and invaded the interior of South Africa. This led to a series of battles and wars between the Zulu's, Voortrekkers and Sotho-Tswana communities in the Orange Free State and southern Transvaal (Gutteridge 2008). The chaos of these battles displaced many indigenous communities in the interior of Southern Africa. In October 1836, the Voortrekkers engaged in a battle with 3000 of Mzilikazi's warriors on Vegkop hill (Zvobgo 2009). The Voortrekkers who were assisted by the Sotho-Tswana and Griqua

groups defeated Mzilikazi's Matabele, who fled to the Limpopo Province and settled in Zimbabwe (Zvobgo 2009).

Following disputes with the British, the Dutch-speaking Voortrekkers migrated north into the interior of southern Africa from the Cape Colony in 1836's in search of creating a homeland, independent of British rule. This migration of approximately 12000 – 140000 Voortrekkers is referred to as the Great Trek. The Voortrekkers migrated north and east into a region that was later called the Orange Free State (Hodge 2008). By 1841 Lukas Corneluis Badenhorst settled in the Pretoria region on a farm that was called Elandspoort and later renamed to Groenkloof (Preller 1938; Van Schalwyk *et al.,* 1992). Other white settler such as David Botha settled on the farm Hartebeestpoort in Silverton and Doors Erasmus settled in Wonderboom (Van Schalkwyk 2012). The area the Voortrekkers settled on was later called Pretoria, after A. H. Pretorius (Miller 2013). Pretoria was officially proclaimed as a town in the 1850's and surveyed in 1859 by A. F. du Toit (Van Schalkwyk *et al.,* 1992; Van Schalkwyk 2009; Miller 2013; Paterson 2014). As a result of the expansion and developments that took place in Pretoria several smaller suburbs were incorporated into the city, including Arcadia which was incorporated into Pretoria during 1889 *(Figure. 7-9)* (Paterson 2014).

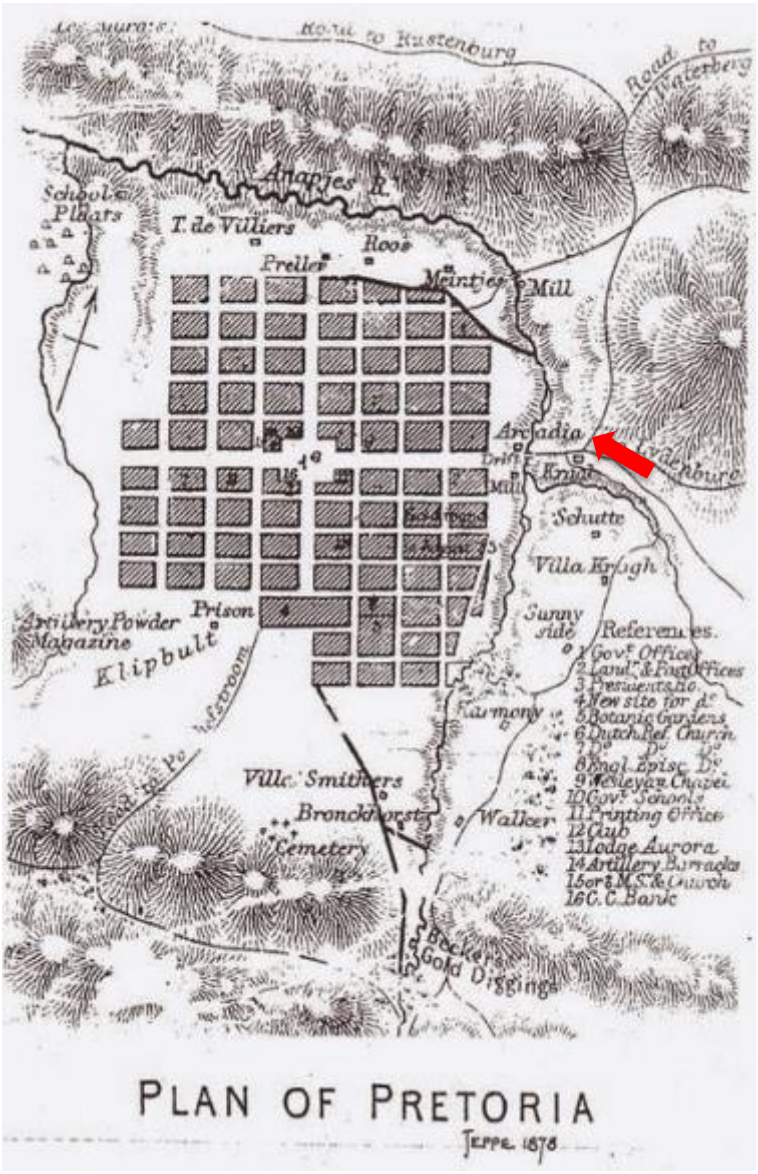


Figure 7: Plan dating to 1878 indicating the planned incorporation of Arcadia into Pretoria (Source: Van Biljon 2015)

E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

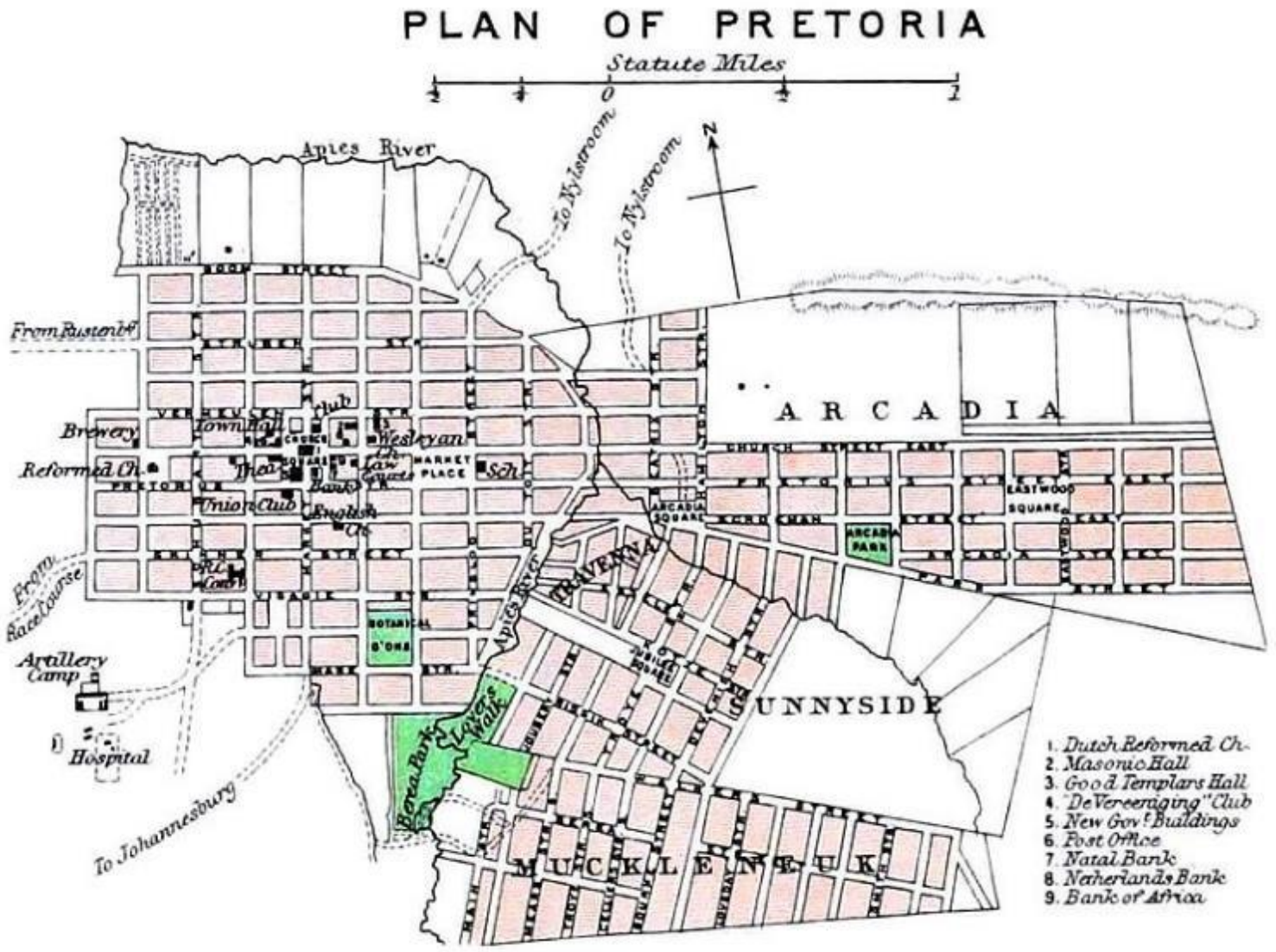


Figure 8: A plan of Pretoria from 1895 indicating Arcadia (The Castle Mail Packets Company, Limited 1895)

E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

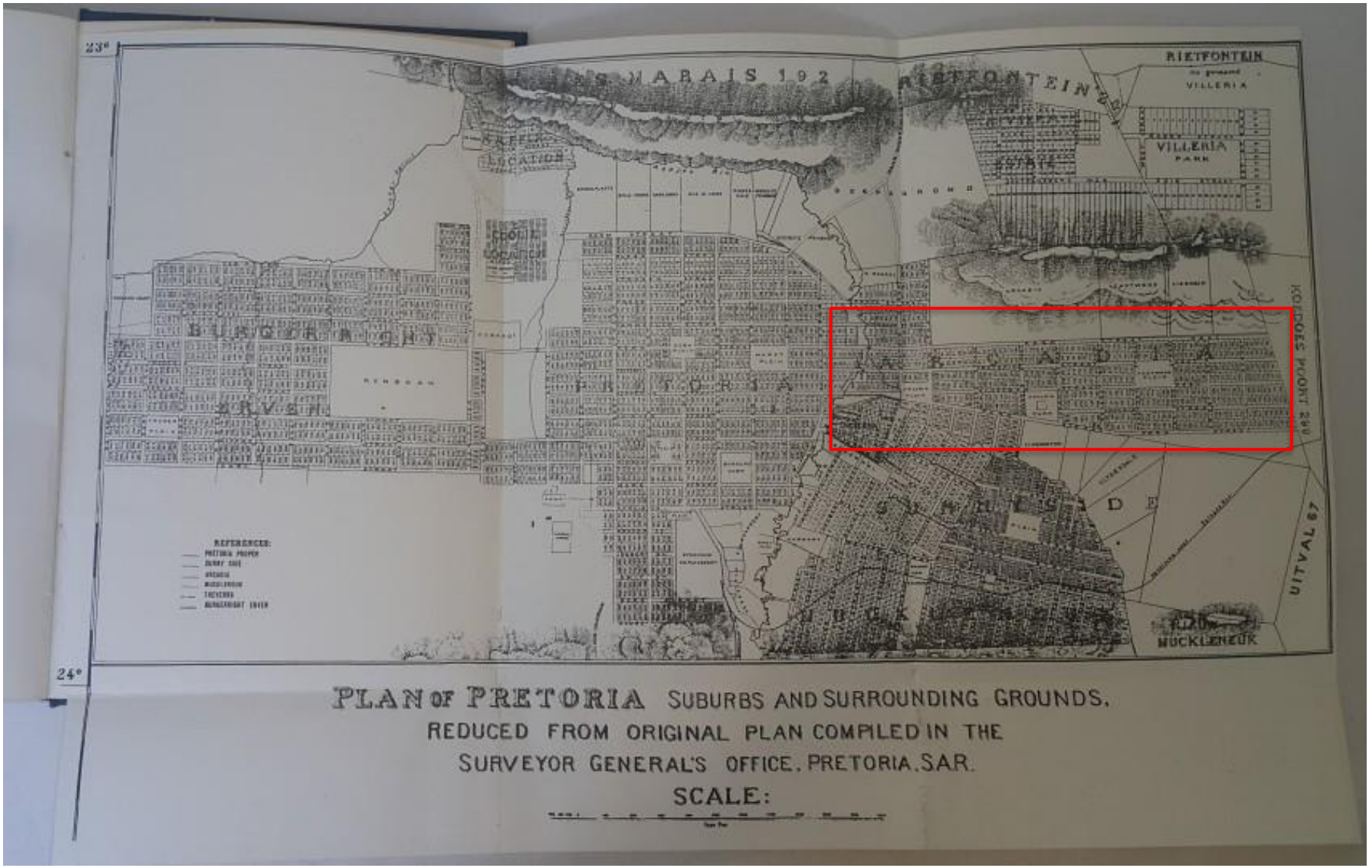


Figure 9: Map of indicating smaller suburbs in Pretoria dating to 1899. Arcadia indicated in red (Longman 1979).

E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

As a result of the British threat the *Zuid-Afrikaansche Republiek* (ZAR) commissioned four forts to be built around Pretoria for protection during the Second Anglo-boer War (1896-1898) *(Figure. 10).* Fort Schanskop, Fort Klapperkop and Fort Wonderboompoort were built by a German firm Krupp while Fort Daspoortrand was built by the French firm Scheneider (Van Vollenhoven 1998). However, British forces occupied Pretoria in 1900 (Van Vollenhoven 1998). The war Between the British and the Boers came to an end in May 1902 (Van Vollenhoven 1998; Pistorius 2007). The British constructed several Blockhouses around Pretoria to defend the railway system (Pistorius 2007). In 1902, the Treaty of Vereeniging signed, was signed by the Boer Republics and the British ending the Second Anglo Boer War with the Orange Free State and Transvaal becoming British Colonies (Lee 2018). The Voortrekker Monument was designed by the architect Gerard Moerdijk and built between 1937 – 1949 to commemorate the Voortrekkers who migrated into the interior of South Africa from the Cape Colony during the Great Trek (1835-1854) (Van Vollenhoven 2014).

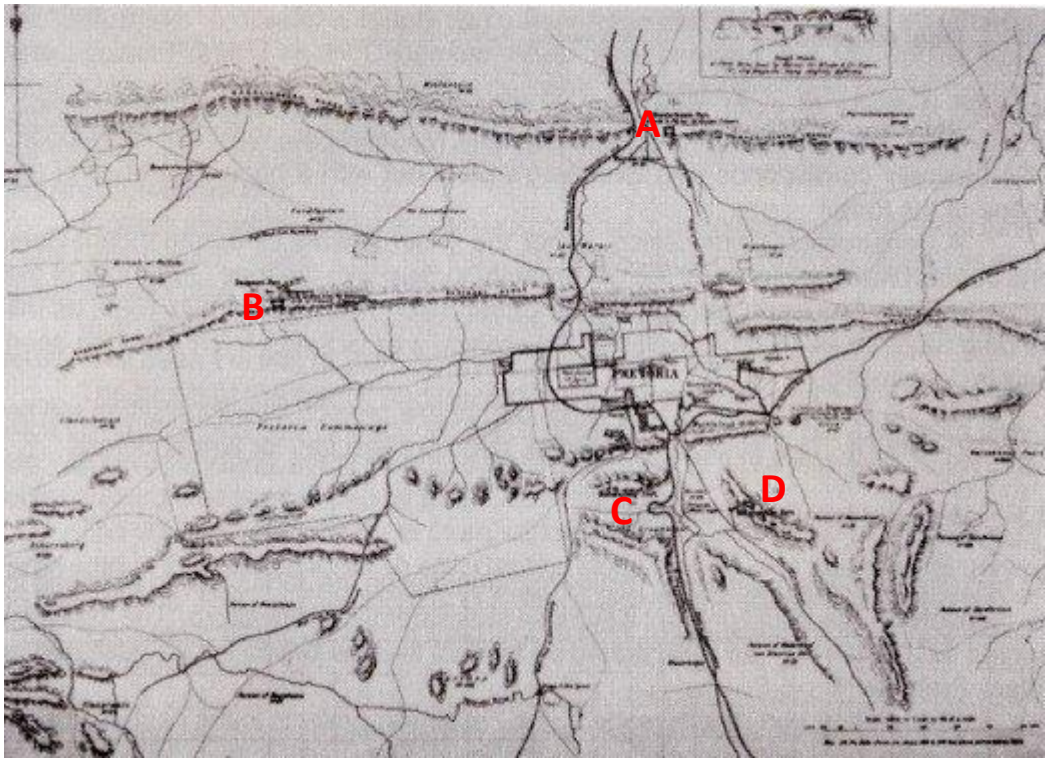


Figure 10: Map dating from 1899 showing the positions of the four forts around Pretoria. A-Fort Wonderboompoort; B-West Fort/ Fort Daspoortrand; C-Fort Schanskop; D-Fort Klapperkop (Van Vollenhoven 1999)

3.3.1. The Caledonian Stadium

The Caledonian Stadium has been the headquarters of the Arcadia Shephard's *(Figure. 11)* since 1903 (Bührmann 2010). The name of the club was derived from the suburb which most of the players came from, namely Arcadia (Bührmann 2010). The club was originally registered in the names of Sir John Wessles and Mr Esselen in 1894 (Bührmann 2010). The headquarters of the Football Association of Pretoria, or the Northern Transvaal Football Association has been located at the Caledonian Stadium since 1903 (Bührmann 2010). During the 1960's football in South Africa started to develop into a professional sport (Bührmann 2010). During this period the Arcadia Shepard's became the first professional club in South Africa (Bührmann 2010). The Arcadia Shepard's once again made history in 1970's (Figure. 12-13) when they became the first club to include a black player (Vincent Julius) as part of the team (Fouche & Manna 2016). As a result of this and the Apartheid policy of the time they were banned from using the Caledonian stadium (Bührmann 2010). The ban was officially lifted in 1997 (Bührmann 2010).

Figure 11: Logo of the Arcadia Shephard's Football club that was established in 1903 (Arcadia Shepherds 2011).

Figure 12: Photograph of an article published in Soccer Corner Magazine August 1977, with an image of members of the Arcadia Shepherds soccer team (Source: SportsHistoryCollectibles.com 2019)

Figure 13: Team photo of the Arcadia Shepard's dating to around 1978 (Tampa Bay Rowdies 2010)

3.4. Conclusions on Literature Review

It is concluded that the proposed study area is located in a region rich in archaeology, history and heritage. Several groups have settled in the region, which led to several conflicts and battles. The region surrounding Pretoria is particularly well known for heritage resources related to the Iron Age and Historical Period. The Arcadia area and the Caledonian Stadium played an important role in the development of South African Professional Football/Soccer. The Arcadia Shepard's Football Club who were located at the Caledonian Stadium since 1903 also played an important role in the development of Multiracial sports teams during the Apartheid Era.

4. STUDY RESULTS

The background information yielded information about known archaeological and heritage resources located in the Gauteng Province, and particularly the Arcadia region. The broader Gauteng Province has a long history with Sotho-Tswana speaking people migrating and settling in the area during the Iron Age. Specifically, the Pretoria region has a long Colonial history that has been shaped by several wars including the Anglo Boer Wars. After the wars the Arcadia region played an important role in South Africa's Soccer/Football history and development.

4.1. Archaeological sites

No archaeological resources were identified during the survey and site visit.

4.2. Built Environment Features

The Caledonian Stadium has been the base for the Arcadia Shepard's since 1903 *(Figure. 14-15).* Several emblems and logos of the Arcadia Shepard's were observed throughout the Stadium. At the moment the grass spots fields do not appear to be maintained *(Figure. 16).*

Figure 14: View of the Pavilion entrance with the original Arcadia Shepard's logo from 1903.

Figure 15: The original Arcadia Shepherds' logo can be found in several place around the Stadium.

Figure 16: General view of the grass sports fields

E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

Table 10: Caledonian-01

Site Name:	**Caledonian-01**
Type:	Built Environment
Density:	Medium
Location/GPS Coordinates:	• 25° 44' 50.60" S • 28° 12' 2.56" E
Approximate Age:	Older than 60 years (Historical)
Applicable Sections of the Relevant Acts:	• Section 34 of the NHRA, No. 25 of 1999
Description:	
Clubhouse: The clubhouse is located at the main entrance at Pretorius street. The Building is constructed from face bricks. The structure has an undercover passageway that is supported by metal beams *(Figure. 17).*	

Figure 17: General view of the back of the Clubhouse building indicating the Eastern Facade.

Table 11: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site

	Destruction and disturbance of heritage resources					
Heritage Impact Assessment	**Impact Name**	**Destruction and disturbance of heritage resources**				
	Alternative					
	Phase	**Planning, Construction, Operational and Closure**				
	Environmental Risk					
	Attribute	**Pre-mitigation**	**Post-mitigation**	**Attribute**	**Pre-mitigation**	**Post-mitigation**
	Nature of Impact	-1	-1	Magnitude of Impact	4	2
	Extent of Impact	3	2	Reversibility of Impact	4	2
	Duration of Impact	4	2	Probability	4	3
	Environmental Risk (Pre-mitigation)					-15,00
	Mitigation Measures					
	It is recommended that: - *The clubhouse is of medium to high significance and as such has heritage significance.* - *): A space in the Clubhouse should be developed as an area used to memorialise and explain the development of professional Soccer/Football in South Africa and Arcadia. This can be achieved through the display of team memorabilia (local and national), information boards about Soccer/Football, as well as visual media such as archival material including video, photographic material, newspaper and magazine articles talking about Soccer/Football in South Africa, the Arcadia Shepard's and possibly the 2010 FIFA World Cup hosted in South Arica* - *The Arcadia Shepard's logos and emblems should be kept and used in a visual display documenting the history of the Sodium and Soccer/Football in South Africa.* - *Subject to approval from PHRA-G and SAHRA*					
	Environmental Risk (Post-mitigation)					-6,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					1
	Low: Issue not raised in public responses					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					1,50
	Final Significance					-9,00

E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

Table 12: Caledonian-02

Site Name:	**Caledonian-02**
Type:	Built Environment
Density:	Medium
Location/GPS Coordinates:	• 25° 44' 50.46" S • 28° 12' 3.49" E
Approximate Age:	Older than 60 years (Historical)
Applicable Sections of the Relevant Acts:	• Section 34 of the NHRA, No. 25 of 1999
Description:	
Pavilion: The Pavilion appears to have been repainted previously. The roof/cover of the pavilion has been damaged most likely as a result of a lack of maintenance *(Figure. 18-20).* The metal railing inform of the spectator seats has also been broken. The design of the Pavilion should be kept during the refurbishments but the material for the roof, railings and seats can be replaced.	

Figure 18: General view of the SW corner and entrance of the pavilion

Figure 19: General view of the western facade of the pavilion with doors for change rooms

Figure 20: General view of the Pavilion roof, seats and metal railings.

E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

Table 13: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site

	Destruction and disturbance of heritage resources					
Heritage Impact Assessment	**Impact Name**	**Destruction and disturbance of heritage resources**				
	Alternative					
	Phase	**Planning, Construction, Operational and Closure**				
	Environmental Risk					
	Attribute	**Pre-mitigation**	**Post-mitigation**	**Attribute**	**Pre-mitigation**	**Post-mitigation**
	Nature of Impact	-1	-1	Magnitude of Impact	4	2
	Extent of Impact	3	2	Reversibility of Impact	4	2
	Duration of Impact	4	2	Probability	4	3
	Environmental Risk (Pre-mitigation)					-15,00
	Mitigation Measures					
	It is recommended that: - *The pavilion is of medium to high significance and as such has heritage significance.* - *The Pavilion can be restored, and the refurbishments can proceed as planned.* - *The cover (corrugated iron sheet roof) of the pavilion should be replaced with new material similar to what is on site since the current material is degrading and presents a risk.* - *Subject to approval from PHRA-G and SAHRA*					
	Environmental Risk (Post-mitigation)					-6,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					1
	Low: Issue not raised in public responses					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					1,50
	Final Significance					-9,00

E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

Table 14: Caledonian-03

Site Name:	**Caledonian-03**
Type:	Built Environment
Density:	High
Location/GPS Coordinates:	• 25° 44' 49.78" S • 28° 12' 3.20" E
Approximate Age:	Older than 60 years (Historical)
Applicable Sections of the Relevant Acts:	• Section 34 of the NHRA, No. 25 of 1999
Description:	
Wall Surrounding Stadium: The original Sandstone wall is still present around the Stadium *(Figure. 21-24).* It extends from the main entrance located at Pretorius street east towards Steve Biko Drive. The wall is missing along Francis Baard Drive and to the west along Nelson Mandela Drive. However, the wall appears to have cracked at several places. The gates at the entrance of the Stadium appears to be damaged and should be repainted and replaced to fit in with the overall aesthetic view of the Historical features of the Stadium wall. Several parts of the wall (other entrances, corners) that have been damaged was also been observed.	

Figure 21: Original Sandstone wall surrounding the Caledonian Stadium along Pretorius Street in the north.

Figure 22: Entrance to the Caledonian Stadium located at Pretorius Street – along Pretorius Street in the north.

Figure 23: Cracks and breaks found along the Original Stone wall (Cracks indicated by red arrows – along Pretorius Street in the north)

Figure 24: Remains of the corners/entrances of the original wall (gate post) along Pretorius Street in the north)

Table 15: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site

	Destruction and disturbance of heritage resources					
Heritage Impact Assessment	**Impact Name**	**Destruction and disturbance of heritage resources**				
	Alternative					
	Phase	**Planning, Construction, Operational and Closure**				
	Environmental Risk					
	Attribute	**Pre-mitigation**	**Post-mitigation**	**Attribute**	**Pre-mitigation**	**Post-mitigation**
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	4	2	Reversibility of Impact	4	2
	Duration of Impact	5	2	Probability	4	3
	Environmental Risk (Pre-mitigation)					-17,00
	Mitigation Measures					
	It is recommended that: - *As one of the original historical features of the Stadium the stonewalls are of high significance and have heritage value, the original wall should be kept and restored.* - *The structural defects as shown in cracks should be repaired in accordance to structural engineering principles – the stone should be removed, the embankments behind the walls retained, the matured trees whose roots are affecting the structural integrity of the walls be removed following the acquisition of necessary permits from Department of Agriculture Forestry and Fisheries, and cement with similar grade as the existing should be used as far as possible. The graffiti and paint should also be removed from the wall and the walls washed with high pressure to extenuate their colour and appeal. The gates posts at the entrance of the Stadium appears to be properly restored to originality in line with the overall aesthetic view of the Historical features of the Stadium wall.* - *Subject to approval from PHRA-G and SAHRA*					
	Environmental Risk (Post-mitigation)					-6,75
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					1
	Low: Issue not raised in public responses					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					1,50
	Final Significance					-10,13

E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

Table 16: Caledonian-04

Site Name:	**Caledonian-04**
Type:	Built Environment
Density:	High
Location/GPS Coordinates:	• 25° 44' 51.96" S • 28° 12' 3.23" E
Approximate Age:	Older than 60 years (Historical)
Applicable Sections of the Relevant Acts:	• Section 34 of the NHRA, No. 25 of 1999
Description:	
Stone wall extending from the Pavilion towards Francis Baard Street: A smaller sandstone wall was found inside the premises of the Stadium *(Figure. 25-27).* The wall is approximately 80 m in length and less than a 1 m tall. It extends south from the Pavilion. The wall consists of several sandstone bricks. Some of the sandstone bricks have been replaced by slate tiles.	

Figure 25: Smaller stone wall found to the south of the Pavilion.

Figure 26: Section of smaller sandstone wall that has been repaired using slate tiles (indicated by red arrow)

Figure 27: Cracked section (red arrow) in the smaller sandstone wall that needs to be repaired and conserved.

Table 17: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site

	Destruction and disturbance of heritage resources					
Heritage Impact Assessment	**Impact Name**	**Destruction and disturbance of heritage resources**				
	Alternative					
	Phase	**Planning, Construction, Operational and Closure**				
	Environmental Risk					
	Attribute	**Pre-mitigation**	**Post-mitigation**	**Attribute**	**Pre-mitigation**	**Post-mitigation**
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	4	2	Reversibility of Impact	4	2
	Duration of Impact	5	2	Probability	4	3
	Environmental Risk (Pre-mitigation)					-17,00
	Mitigation Measures					
	It is recommended that: - *The smaller sandstone walls are located within the Stadium premises and are of high significance and heritage value, they form part of the old stadium property.* - *The smaller sandstone wall found inside the stadium premises should also be restored to originality, where sandstone has been replaced with slate – an attempt should be made to remove the slate and replace with sandstone as original historical features.* - *Subject to Approval from PHRA-G and SAHRA*					
	Environmental Risk (Post-mitigation)					-6,75
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					1
	Low: Issue not raised in public responses					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					1,50
	Final Significance					-10,13

E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

Table 18: Caledonian-05

Site Name:	**Caledonian-05**
Type:	Built Environment
Density:	Low
Location/GPS Coordinates:	• 25° 44' 53.98" S • 28° 12' 3.67" E
Approximate Age:	Contemporary
Applicable Sections of the Relevant Acts:	• Section 34 of the NHRA, No. 25 of 1999
Description:	
Guard House (Recent in age): A small brick Guard house is located south of the sports fields in Francis Baard Street *(Figure. 28).* The building forms part of the metal fence surrounding the Caledonian Stadium.	

Figure 28: General view of a Guard house

Table 19: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site

	Destruction and disturbance of heritage resources					
Heritage Impact Assessment	**Impact Name**	**Destruction and disturbance of heritage resources**				
	Alternative					
	Phase	**Planning, Construction, Operational and Closure**				
	Environmental Risk					
	Attribute	**Pre-mitigation**	**Post-mitigation**	**Attribute**	**Pre-mitigation**	**Post-mitigation**
	Nature of Impact	-1	-1	Magnitude of Impact	3	2
	Extent of Impact	3	2	Reversibility of Impact	3	2
	Duration of Impact	4	2	Probability	3	3
	Environmental Risk (Pre-mitigation)					-9,75
	Mitigation Measures					
	It is recommended that: - *The Guard house is contemporary and of low heritage value and has very little heritage significance.* - *Since the Guard house is of low heritage significance the planned refurbishments can proceed as planned.* - *Subject to Approval from PHRA-G and SAHRA*					
	Environmental Risk (Post-mitigation)					-6,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					1
	Low: Issue not raised in public responses					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					1,50
	Final Significance					-9,00

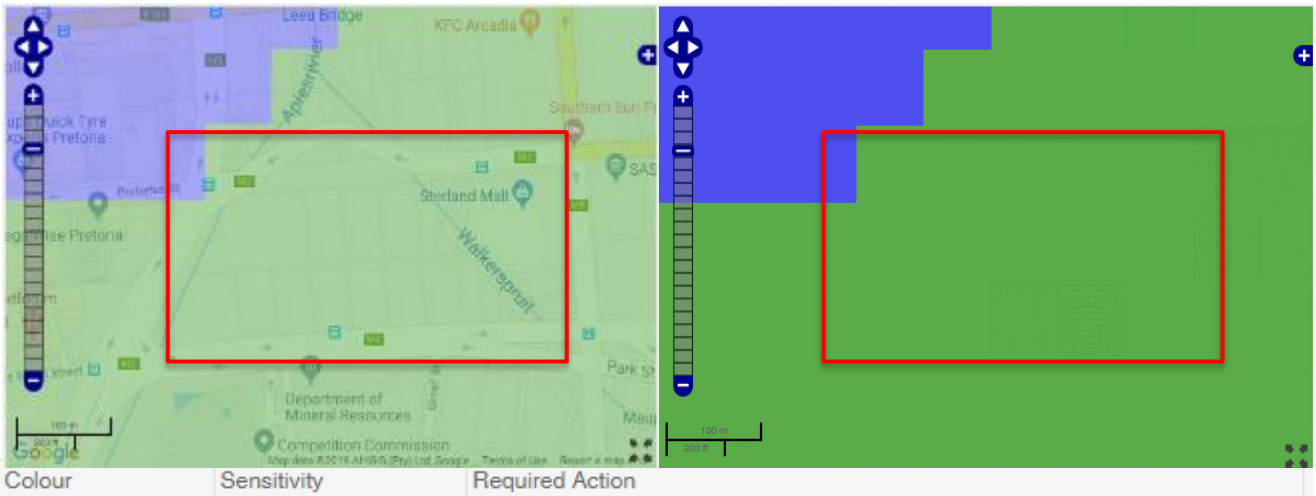
E: Environment
S: Socio-Economics
H: Heritage
S: Sustainability Solutions

4.3. Burial Grounds and Graves

No archaeological resources were identified during the survey and site visit.

4.4. Paleontological Sensitivity

The SAHRA Palaeo-Sensitivity Layer *(Figure. 29)* shows that the project area is in a moderate sensitivity area. As such a desktop study is required.



Colour	Sensitivity	Required Action
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Figure 29: Palaeo-Sensitivity layer of Caledonian Stadium (Red rectangle) in the Gauteng Province.

4.5. Site Ratings and Heritage Significance

Table 20: Site significance classification and ratings for the buildings located in the project area

FEATURE	FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
Caledonian-01	Generally Protected A (GP. A)	-	High / Medium Significance	Mitigation before destruction

Caledonian-02	Generally Protected A (GP. A)	-	High / Medium Significance	Mitigation before destruction
Caledonian-03	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Caledonian-04	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Caledonian-05	Generally Protected C (GP. A)	-	Low Significance	Destruction

5. CONCLUSIONS

Based on the results of literature review and the survey results the following conclusions are made:

- It is concluded that the project area near Arcadia, is located in a region rich in archaeology and heritage resources such as historic buildings and heritage features associated with the history and heritage of Pretoria.
- The Caledonian Stadium has a rich history related to the development of Professional Soccer/Football in South Africa. The Arcadia Shephard's Football Club was first established in 1903 and trained at the Caledonian Stadium. The team mostly consisted of players from the Arcadia area, hence the name Arcadia Shepard's. Later on, the Arcadia Shephard's Football Club would also play an important role in the Apartheid Era, as they were the first club to have a multiracial team in the 1970's. As a result of this the Arcadia Shepard's team was banned from the Stadium, and only returned in 1997 when the ban was lifted.
- Several historical resources were identified in the project area and include:
    - Caledonian-01 (Clubhouse). The clubhouse is of medium to high significance and as such has heritage significance.
    - Caledonian-02 (Pavilion). The pavilion is of medium to high significance and as such has heritage significance.
    - Caledonian-03 (Sandstone boundary wall/fence). As one of the original historical features of the Stadium the stonewalls are of high significance and have heritage value
    - Caledonian-04 (smaller sandstone wall). The smaller sandstone walls are located within the Stadium premises and are of high significance and heritage value, they form part of the old stadium property.
    - Caledonian-05 (Guard house) located near Francis Baard Street. The Guard house is contemporary and of low heritage value and has very little heritage significance.
- In terms of SAHRA Paleontological Sensitivity Layer, the project area is located in moderate sensitivity area.

6.RECOMMENDATIONS:

Based on the Limitations and Conclusions it is recommended that:

- Caledonian-01 (Clubhouse): A space in the Clubhouse should be developed as an area used to memorialise and explain the development of professional Soccer/Football in South Africa and Arcadia. This can be achieved through the display of team memorabilia (local and national), information boards about Soccer/Football, as well as visual media such as archival material including video, photographic material, newspaper and magazine articles talking about Soccer/Football in South Africa, the Arcadia Shepard's and possibly the 2010 FIFA World Cup hosted in South Arica. The Arcadia Shepard's logos and emblems should be kept and used in a visual display documenting the history of the Caledonian Stadium.
- Caledonian-02 (Pavilion). The Pavilion can be restored, and the refurbishments can proceed as planned. The cover (corrugated iron sheet roof) of the pavilion should be replaced with new material similar to what is on site since the current material is degrading and presents a risk.
- Caledonian-03 (Sandstone boundary stone walls): The original walls and gate posts should be retained and be kept and restored. The structural defects as shown in cracks should be repaired in accordance to structural engineering principles – the stone should be removed, the embankments behind the walls retained, the matured trees whose roots are affecting the structural integrity of the walls be removed following the acquisition of necessary permits from Department of Agriculture Forestry and Fisheries, and cement with similar grade as the existing should be used as far as possible. The graffiti and paint should also be removed from the wall and the walls washed with high pressure to extenuate their colour and appeal. The gates posts at the entrance of the Stadium appears to be properly restored to originality in line with the overall aesthetic view of the Historical features of the Stadium wall.
- Caledonian-04 (smaller sandstone wall): The smaller sandstone wall found inside the stadium premises should also be restored to originality, where sandstone has been replaced with slate – an attempt should be made to remove the slate and replace with sandstone as original historical features.

- Caledonian-05 (Guard house). Since the Guard house is of low heritage significance the planned refurbishments can proceed as planned.

- It should be noted that some archaeological material, including artefacts and graves can be buried underground and as such, may not have been identified during the initial survey and site visits. In the case where the proposed development activities bring these materials to the surface, they should be treated as **Chance Finds.** Should such resources be unearthed it is recommended that, the prospecting activities be stopped immediately, and an archaeologist be contacted to conduct a site visits and make recommendations on the mitigation of the finds. SAHRA and PHRA-G should also be informed immediately on such finds.
- In terms of the SAHRA Paleontological Sensitivity Layer, the area falls within a region defined as a moderate sensitivity area. As such a desktop study was required (See PIA report).
- It is recommended that both the SAHRA and the PHRA-G grant the project a **Positive Review Comment** and allow the refurbishments of the Caledonian Stadium Pavilion and Clubhouse and the development of the proposed new facilities and sport fields in Arcadia to proceed as planned.

7.REFERENCES

Anderson, M. 2009. Marothodi: *The Historical Archaeology of an African Capital*. Northamptonshire: Atikkam Media Limited

Arcadia Shepherds. 2011. Arcadia Shepherds. F. C. Internet: https://en.wikipedia.org/wiki/ Arcadia_Shepherds_F.C. Accessed: 18 February 2019

Badenhorst, S., 2010. Descent of Iron Age Farmers in Southern Africa During the Last 2000 Years. African Archaeological Review, 27:87–106.

Berger, L.R., Hawks, J., de Ruiter, D.J., Churchill, S.E., Schmid, P., Delezene, L.K., Kivell, T.L., Garvin, H.M., Williams, S.A., DeSilva, J.M. and Skinner, M.M., 2015. Homo naledi, a new species of the genus Homo from the Dinaledi Chamber, South Africa. *Elife*, 4: e09560.

Bergh, J. S. 1999. *Die geskiendenis atlas van Suid-Afrika. Die vier Noordelike Provinsies*. Pretoria: J. L. van Schaik

Binneman, J.F., 1995. Symbolic construction of communities during the Holocene Later Stone Age in the South–Eastern Cape. Unpublished PhD thesis. Johannesburg: University of the Witwatersrand.

Birkholtz, P., 2011. Phase 1 Heritage Impact Assessment: Proposed Development of Reiger Park Ext. 16 Boksburg, Ekurhuleni Metropolitan Municipality, Gauteng Province.

Boeyens, J. 2003. The Late Iron Age Sequence in The Marico And Early Tswana History. *South African Archaeological Bulletin*, 58(178): 63-78.

Bührmann, M. 2010. The Caledonian Sports Grounds. Public space as part of inner-city regeneration. Masters dissertation. Pretoria: University of Pretoria

Clarke, N. 2014. Heritage Impact Assessment Report: Multipurpose Commercial Development. Loftus Park, Pretoria Erf 414/418 1552 And Portion 397, Arcadia, Pretoria

Du Piesani, J., 2014. Heritage Impact Assessment for the Mining Right Application for the Reclamation of the Soweto Cluster Dumps, Roodepoort, Gauteng Province

Evers, T. 1975. Recent iron age research in the eastern Transvaal, South Africa. The South African Archaeological Bulletin, pp.71-83.

Evers, T. 1977. Plaston Early Iron Age Site, White River District, Eastern Transvaal, South Africa. The South African Archaeological Bulletin, 32(126): 170-178.

Fouche, A. & Manna, L. 2016. Caledonian Stadium Arcadia Tshwane. Internet: http://www.theheritageportal.co.za/thread/caledonian-stadium-arcadia-tshwane Accessed: 18 February 2019

Friede, H.M., 1980. Iron Age mining in the Transvaal. Journal of the Southern African Institute of Mining and Metallurgy, 80(4): 156-165.

Gutteridge, L. 2008. *The South African Bushveld: A Field Guide from the Waterberg*. Johannesburg: Southbound

Hall, S. 1990. Hunter-gatherer-fishers of the Fish River Basin: A Contribution to the Holocene Prehistory of the Eastern Cape. Unpublished PhD thesis. Stellenbosch: University of Stellenbosch.

Hall, S. and Binneman, J.F. 1987. Later Stone Age Burial Variability in the Cape: A Social Interpretation. South African Archaeological Society 42(146): 140–152.

Hodge, C. C. 2008. *Encyclopedia of the Age of Imperialism, 1800-1914: A-K*. London: Greenwood Publishing Group

Huffman, T. 1997. Archaeological survey of the Pretoria south-East sport Complex.

Huffman, T. 2002. Regionality in the Iron Age: the case of the Sotho-Tswana. *Southern African Humanities*, 14: 1–22.

Huffman, T. 2007a. Handbook to the Iron Age: The Archaeology of Pre- Colonial Farming Societies in Southern Africa. Pietermaritzburg: University of KwaZulu-Natal Press.

Huffman, T. 2007b. Archaeological assessment of Van Wyks Restant, Krugersdorp. Gauteng Province.

Klein, R. G. 2000. The Earlier Stone Age of Southern Africa. The South African Archaeological Bulletin, 27(172): 107-122.

Kruger, N., 2016. Delron: Archaeological Impact Assessment (AIA) of areas demarcated for the proposed Zandspruit township establishment on portions of the farm Zandspruit 191-iq and holding 43 Sonendal A.H, City of Johannesburg, Gauteng province.

Küsel, U. 2003. Survey of Cultural Heritage resources on the farm Rietfontein 375 JR Pretoria District.

Lee, S. 2018. Territorial settlements in peace treaties, In Kohen, M. G. & Hébié, M. *Research Handbook on Territorial Disputes in International Law.* Northampton: Edward Elgar Publishing,

Lombard, M., Wadley, L., Deacon, J., Wurz, S., Parsons, I., Mohapi, M., Swart, J. and Mitchell, P., 2012. South African and Lesotho Stone Age sequence updated. The South African Archaeological Bulletin, 67(195), pp.123-144.

Longland, H. 1979. Longland's Pretoria directory for 1899. Pretoria: The State Library

Maggs, T.M., 1976. Iron Age communities of the Southern Highveld. Pietermaritzburg: Natal Museum.

Mason, R. 1968. Transvaal and Natal Iron Age settlements revealed by aerial photography and excavation. *African Studies*, 27: 167-180.

Mason, R. 1986. Origins of black people of Johannesburg and the southern western central Transvaal, AD 350-1880. *Occasional Paper No. 16 of the Archaeological Research Unit*. Johannesburg: Witwatersrand University Press.

Miller, S. 2013. Phase I Heritage Impact Assessment For The Four Streets Palace, Parliament, Bank And Mutual For The Extension Of The Proposed Beautification Of Church Square And Its Associated Streets Pretoria Tshwane Gauteng

Mitchell, P. 2002. The Archaeology of Southern Africa. Cape Town: Cambridge University Press.

Mitchell, P. and Whitelaw, G., 2005. The archaeology of southernmost Africa from c. 2000 BP to the early 1800s: a review of recent research. The Journal of African History, 46(2): 209-241.

Paterson, A. 2014. Specialist Heritage Impact Report: As Partial Fulfilment Of Specialist Heritage Report Of Erf R/783 Brooklyn, 191 William Street, Brooklyn

Pelser, A. 2013. Basic Heritage Impact Assessment For The Salvokop Township Establishment On The Remainder Of Portion 406 Of The Farm Pretoria Town And Townlands 351JR, Salvokop, Tshwane, Gauteng

Pelser, A., 2015. Final HIA Report for Proposed Township Developments (Boksburg West Ext.7 & Liliantion Ext.7) Located on Portions 410 & 411 of the Farm Driefontein 85IR, Boksburg, Gauteng for Application for Alterations and Demolitions APAC015/39.

Pistorius, J. 2007. A Phase I Archaeological Impact Assessment Study for a Proposed New Security Fence For The Bryntirion Estate In Pretoria (Tshwane), Gauteng Province Of South Africa

Preller, G.S. 1938. Ou-Pretoria. Pretoria: Afrikaanse Kultuurraad.

Reynolds, S. C. and Kibii, J. M. 2011. Sterkfontein at 75: review of paleoenvironments, fauna, dating and archaeology from the hominin site of Sterkfontein (Gauteng Province, South Africa). Palaeontological Africana, 46: 59-88.

Roche, H., Blumenschine, R.J. and Shea, J.J., 2009. Origins and adaptations of early Homo: what archaeology tells us. Cited in: The First Humans–Origin and Early Evolution of the Genus Homo (pp. 135-147). Springer, Dordrecht.

Roodt, F. 2002. Phase I Archaeological Impact Assessment for the proposed Township development, Lotus Gardens, Pretoria Gauteng.

SportsHistoryCollectibles.com. 2019. Soccer Corner Magazine August 1977. Internet: https://sportshistorycollectibles.com/product/soccer-corner-magazine-august-1977/ Accessed: 18 February 2019

Sutton, M., 2012. *The Archaeology of Swartkrans cave, Gauteng, South Africa: New Excavations of Members 1 and 4.* Unpublished PhD Dissertation: University of Witwatersrand.

Tampa Bay Rowdies. 2010. Tampa Bay Rowdies Appreciation Blog (1975 To 1993) Internet: http://mytampabayrowdies.blogspot.com/2010/01/rowdies-related-photos-arcadia.html Accessed: 18 February 2019

Teichert, F. 1999. Archaeological excavations at site 2528 CA 40, Iron Age site for Masters degree. Annual report for the National Monuments Council.

The Castle Mail Packets Company Limited. 1895. The Castle Line atlas of South Africa. London: Donald Currie & Co.

Tomose, N., 2013. A Heritage Impact Assessment study for the proposed PRASA's modern maintenance deports upgrade, Braamfontein PRASA Depot, cojmm, Gauteng Province, South Africa

Van Biljon, P. 2015. Plan of Pretoria. Internet: http://melvinresidence.blogspot.com/2015/02/timeline-of-pretorias-history.html Accessed: 18 February 2019

Van der Walt, J. 2008. Archaeological Impact Assessment For the Proposed Bird & Game Hide At The Roodeplaat Nature Reserve, Pretoria, Gauteng.

Van Ryneveld, K., 2015. Phase 1 Archaeological Impact Assessment - Proposed Mixed-use Development (Jupiter Ext 9) on farms Elandsfontein 90-IR and 108-IR, Germiston, Ekurhuleni Metropolitan Municipality, Gauteng.

Van Schalkwyk, J. & Moifatswane, S. M. 1993. 'n Argeologiese Ondersoek Van Die Fonteinedalgebied, Geleë Op Die Plaas Groenkloof 358-Jr, Pretoria.

Van Schalkwyk, J. & Van Vollenhoven, A. & Naude, M. 1992. ‘n Argeologiese Ondersoek Van Die Bouvalle Bekend As Die Lukas Bronkhorsthuis In Die Fonteinedal, Pretoria

Van Schalkwyk, J. 1994. ‘n Argeologiese Ondersoek Van Die Watervoor In Kerkstraat, Pretoria-Sentraal.

Van Schalkwyk, J. 1995. An Archaeological Investigation Of Certain Aspects Of The Garden Of Melrose House, Pretoria

Van Schalkwyk, J. 2009. Heritage Impact Assessment For The Proposed Development On Portion 330, Doornkloof 391jr, Gauteng Province

Van Schalkwyk, J. 2012. Heritage Impact Assessment For The Proposed Fort West Phase 1 Development, Pretoria Magisterial District, Gauteng Province

Van Schalkwyk, J., 2016. Cultural Heritage Impact Assessment for the proposed installation Of Turffontein corridor conduits sand outfalls storm water management systems, City of Johannesburg District Municipality, Gauteng Province.

Van Vollenhoven, A. 1998. The Military Fortifications of Pretoria (1880-1902). Pretoria: Technikon Pretoria

Van Vollenhoven, A. 2014. A Report On A Heritage Impact Assessment For The Building Of An Educational Centre At The Voortrekker Monument Heritage Site On The Farm Groenkloof 358 JR, Pretoria District, Gauteng Province

Wadley. L., 2007. The Middle Stone Age and Later Stone Age. In Bonner, P. & Esterhuysen, A. & Jenkins, T. A. *Search for Origins: Science, History and South Africa's 'Cradle of Humankind'*. Johannesburg: Wits University Press. Pg 122 -135.

Zvobgo, C. J. M. 2009. *A History of Zimbabwe, 1890-2000 and Postscript, Zimbabwe, 2001-2008*. Tyne: Cambridge Scholars Publishing.

7. APPENDIX 1: SPECIALIST CV – CHERENE DE BRUYN

Name	:	Cherene de Bruyn
Profession	:	Archaeology
Date of Birth	:	1991/03/01
Parent Firm	:	NGT Holdings (Pty) Ltd
Position in Firm	:	Archaeologist and Heritage Consultant
Years with firm	:	8 Months
Nationality	:	South Africa
BI & Male/Female Status	:	White South African Female
Languages	:	

Language	Speak	Read	Write
English	X	X	X
Afrikaans	X	X	X

Countries of Work Experience	:	South Africa
Proposed Position on Team	:	Archaeologist and Heritage Consultant

KEY QUALIFICATIONS

Cherene is a hardworking Archaeologist who has developed a mature and responsible approach to any task she undertakes. She received the British High Commissions Chevening Scholarship to complete my Master's degree in Archaeology at UCL in 2016/2017. She is skilled in excavating and analysing archaeological artefacts such as pottery and skeletal human remains, and have an interest in Egyptian, African and burial archaeology. Cherene is a motivated individual who gained relevant professional experience in the heritage sector through Internships as well as through volunteering on archaeological projects.

●●●●● = Excellent ●●●● = Proficient ●●● = Intermediate ●● = Developing ● = Novice

Communication	●●●●●
Team Work	●●●●●
Time Management	●●●●●
Adaptability	●●●●●
Creativity	●●●●
Leadership	●●●●
Excavation	●●●●●
Recording	●●●●●
MS Office	●●●●
Google Earth	●●●●
QGIS	●●●
Total Station	●●●

EDUCATION

NAME OF INSTITUTION	DEGREE OBTAINED	DATES ATTENDED
University College London	MA in Archaeology	2016-2017
University of Pretoria	BSC Honours in Physical Anthropology	2015
University of Pretoria	BA Honours in Archaeology	2013
University of Pretoria	BA in Archaeology	2010-2012

RELEVANT EXPERIENCE

DATE	ASSIGNMENT	POSITION	LOCATION
2018-Current	***Employer - NGT Holdings (Pty) Ltd***	***Archaeologist and Heritage Consultant***	***RSA***
2018	Heritage Impact Assessment Study for the Proposed New Lambano Sub Acute Facility on Stand 5454, 5455, 5456,5457 and New Training Facility on Stands 5458 and 5460 in Kensington, Johannesburg, South Africa	Author	
2018	Heritage Impact Assessment for the proposed prospecting rights application and environmental authorisation for the farm Three Sisters in Barberton, within the city of Mbombela Local District, Mpumalanga, South Africa	Author	
2018	Report on the exhumation and reburial report of 16 graves from Doornkop, to Voortrekker Cemetery in Middelburg, Mpumalanga Province, South Africa	Author	
2018	Heritage Impact Assessment and Integrated Cultural Resources Management Study For The Proposed Mfolozi-Mbewu 765kv Transmission Line, Zululand And King Cetshwayo District Municipality, Kwazulu-Natal.	Author	
2018	Heritage Impact Assessment for the proposed for the Construction of the Bulk Water Supply Pipeline and Feeder Pipes in Dunnottar, Gauteng Province	Author	
2018	Letter of Recommendation for Exemption from Conducting a full Heritage Impact Assessment Study for the Matlala Park, Ekurhuleni Metropolitan Municipality, Gauteng Province.	Author	

DATE	ASSIGNMENT	POSITION	LOCATION
2018	Heritage Impact Assessment for the Proposed KwaThema to Grundlingh WWTW Bulk Outfall Sewer: Capital Project Implementation near Nigel, Gauteng Province, South Africa.	Author	
2018	Heritage Impact Assessment the prospecting right and environmental authorisation application for Kroonstad South situated in the Free State Province.	Author	
2018	Heritage Impact Assessment the prospecting right and environmental authorisation application for Vredefort West situated in the Free State Province.	Author	
2018	Archaeological impact assessment for a mining permit application for portion 19 of the farm Syferfontein 303 IP within the city of Matlosana Local Municipality in the North West Province, South Africa.	Author	
2018	Background literature study on the archaeology and history of Madimatle Mountain and the Gatkop Caves situated within the Thabazimbi Local Municipal area of Waterberg District, Limpopo Province, south Africa.	Author	
2018	Heritage Impact Assessment report for the proposed development of a SMME Training Centre and Youth Enterprise Park on Erf 1977 Edendale-CC located in the Msunduzi Local Municipality, Pietermaritzburg, KwaZulu-Natal Province, South Africa.	Author	
2018	Prospecting Right and Environmental Authorisation for the proposed WRE Nkunzana Prospecting Right Project.	Researcher	
2014-2015	***Forensic Anthropological Research Centre, University of Pretoria***	***DST-NRF Archaeological Intern***	***RSA***
2015	Report on rescue excavations and skeletal analyses of two archaeological graves inadvertently uncovered in Boitekong, North-West.	Field Assistant and Researcher	

DATE	ASSIGNMENT	POSITION	LOCATION
2015	Report on Follow-up site visit excavation and physical anthropological analyses of archaeological human remains transferred from SAPA Victim Identification Center to Department of Anatomy. Mamelodi East Phase 2 House 566.	Field Assistant and Researcher	
2014	Rescue excavation of an unmarked grave yard at Diamond Park, Greenpoint, Kimberley, Northern Cape Province	Field Assistant	
2014	Follow up site visit on human remains found at Bothlokwa (Ramatjowe & Mphakahne), Limpopo Province	Field Assistant	
2014	Follow up site visit on human remains found in Waterpoort, Soutpansberg, Limpopo Province	Field Assistant	
2014	***Archaeological Assistant***	***Archaetnos Ltd***	***RSA***
2014	A report on a cultural heritage impact assessment for the proposed development on portion 91 of the farm Waterkloof 305 JQ, close to Rustenburg, Northwest Province.	Field Assistant	
2014	A report on the phase II heritage investigation of a farmstead on portion 470 of the farm Waterkloof 305 JQ near Rustenburg in the Northwest Province.	Field Assistant	
2014	A report on the heritage impact assessment for the proposed new bulk water and sewer pipeline from Cosmo City to Lanseria, Gauteng Province.	Field Assistant	
2014	A report on the updating of a previous cultural heritage impact assessment for the EMPR alignment and consolidation process at Anglo American Platinum: Rustenburg platinum mines – Rustenburg section, Northwest Province.	Field Assistant and Researcher	
2014	A report on a cultural heritage impact assessment for the proposed Thusanang housing development, close to Rustenburg, Northwest Province.	Field Assistant and Researcher	
2014	A report on the cultural heritage impact assessment for the Tshepong extension 1, 2 and 3 housing development, close to Vereeniging, Gauteng Province.	Field Assistant	

DATE	ASSIGNMENT	POSITION	LOCATION
2014	A report on the cultural heritage impact assessment for the proposed Isibonelo Colliery Block Z opencast mine, close to Kriel, Mpumalanga Province.	Field Assistant	
2014	A report on a cultural heritage impact assessment for a proposed transport facility on portion 33 of the farm Vaalbank 289 JS, close to Middelburg, Mpumalanga Province.	Field Assistant	
2014	Report on a cultural heritage Impact assessment done for the Anglo-American Platinum and African Rainbow Minerals Modikwa Platinum Mine South Shaft 2 project, close to Burgersfort, Limpopo Province.	Field Assistant	

SUMMARY OF OTHER EXPERIENCE

DATE	EMPLOYER	POSITION	LOCATION
2018	Sci-bono Discovery Centre	Lascaux Exhibition Tour Guide	Newton, SA
2018, 2016	Umbeli Belli Middle Stone Age Excavation	Field and Lab Assistant	Kwazulu-Natal, SA
2015-2016	Bio-Archaeological Analysis and Archaeological Geophysics Unit, University of Pretoria	Archaeological Contractor	Pretoria, SA
2016, 2015	Wenner-Gren Foundation Funded Grassridge Archaeological and Palaeoenvironmental Project	Field and Lab Assistant	Eastern Cape, SA
2015	Department of Anatomy, University of Pretoria	Student Teaching Assistant	Pretoria, SA

MEMBERSHIPS

DATE	ORGANIZATION	POSITION
2019- Present	Association of Southern African Professional Archaeologists	CRM Accredited
2018-Present	International Association of Impact Assessment South Africa	Member
2015 - Present	Association of Southern African Professional Archaeologists	Professional Member

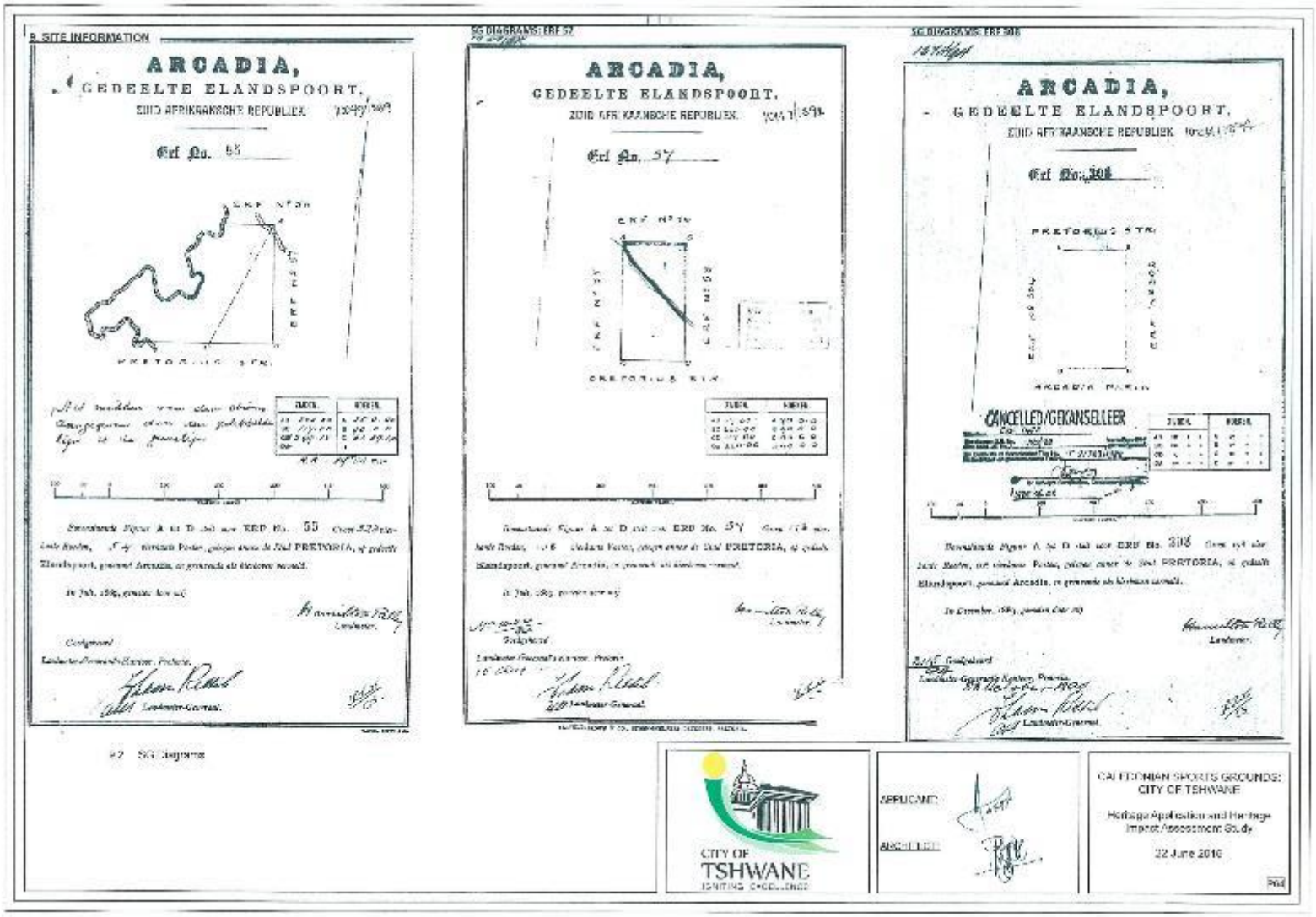
DATE	ORGANIZATION	POSITION
2014 - Present	South African Archaeological Society	Member

DECLARATION

I confirm that the above information contained in the CV is an accurate description of my experience and qualifications and that, at the time of signature, I am available and willing to serve in the position indicated for me in the Proposal, for the durations and at the locations indicated therein.

Cherene de Bruyn 1 February 2019

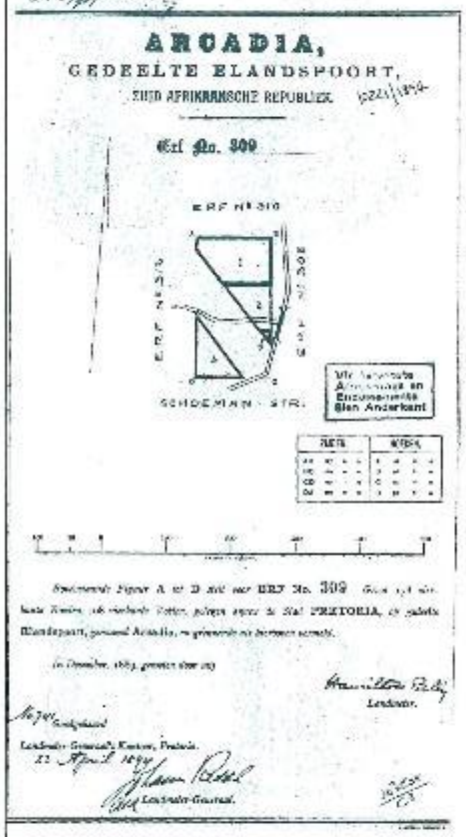
8. APPENDIX 2: HISTORICAL SITE INFORMATION

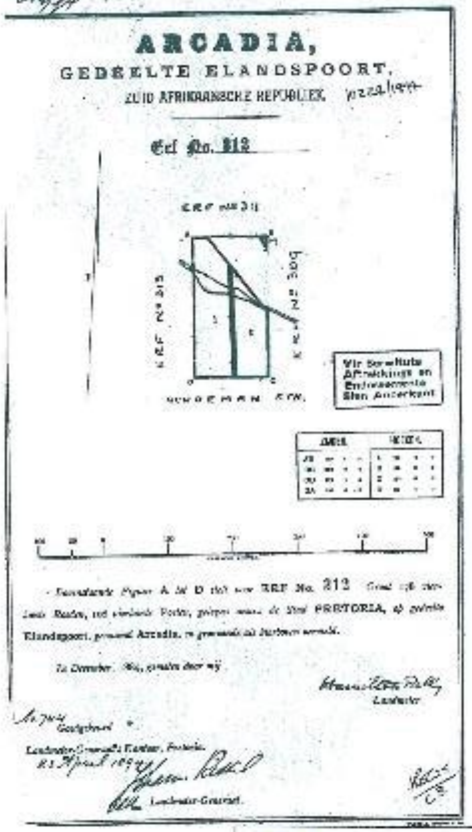


9. SITE INFORMATION

SG DIAGRAMS: ERF 312

SG DIAGRAMS: ERF 313





NOT AVAILABLE

9.2 SG Diagrams

CITY OF TSHWANE

APPLICANT

ARCHITECT

CALEDONIAN SPORTS GROUNDS
CITY OF TSHWANE

Heritage Application and Heritage Impact Assessment Study

22 June 2015

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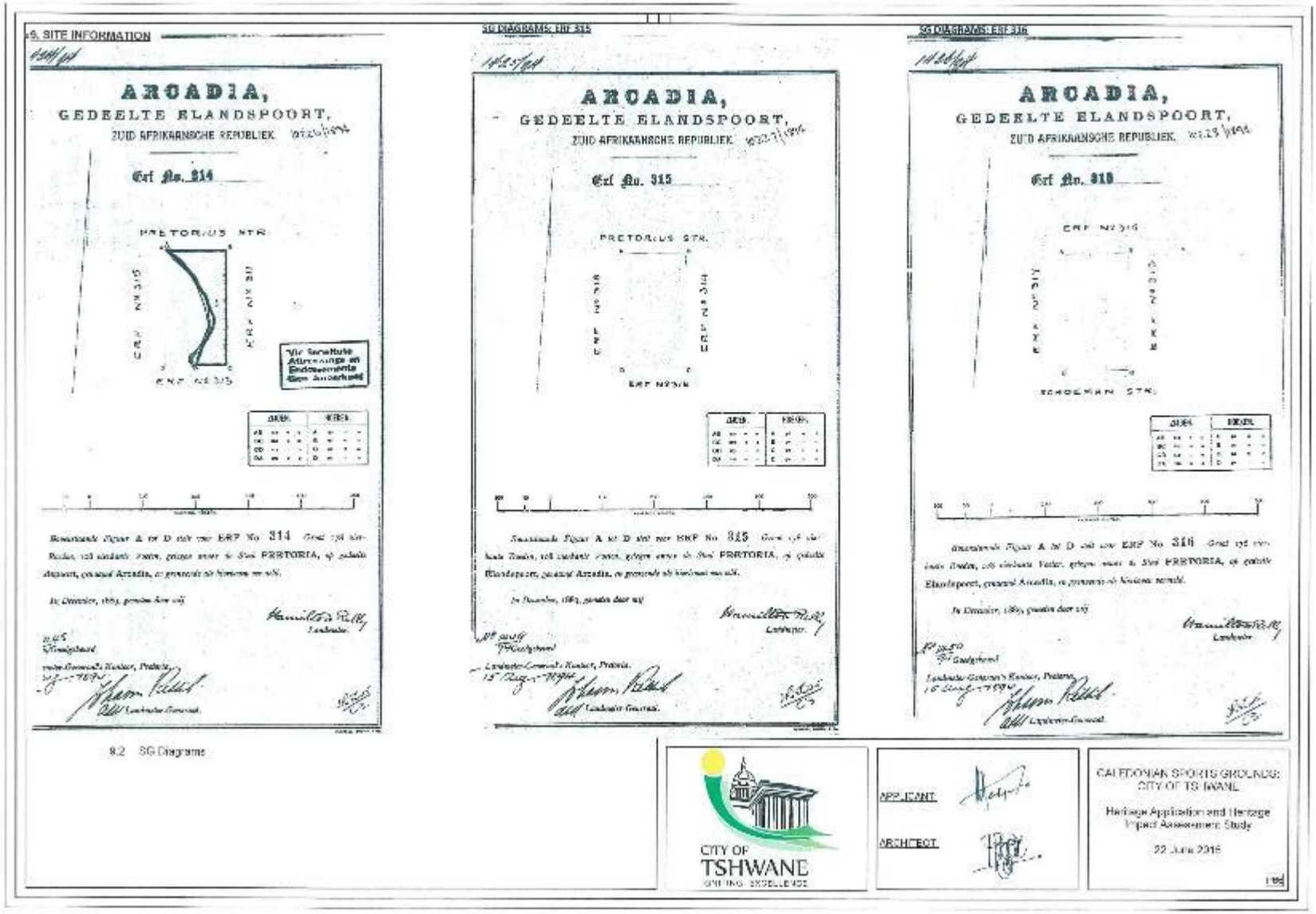


8.2 SG Diagrams

CITY OF TSHWANE
GIVING EXCELLENCE

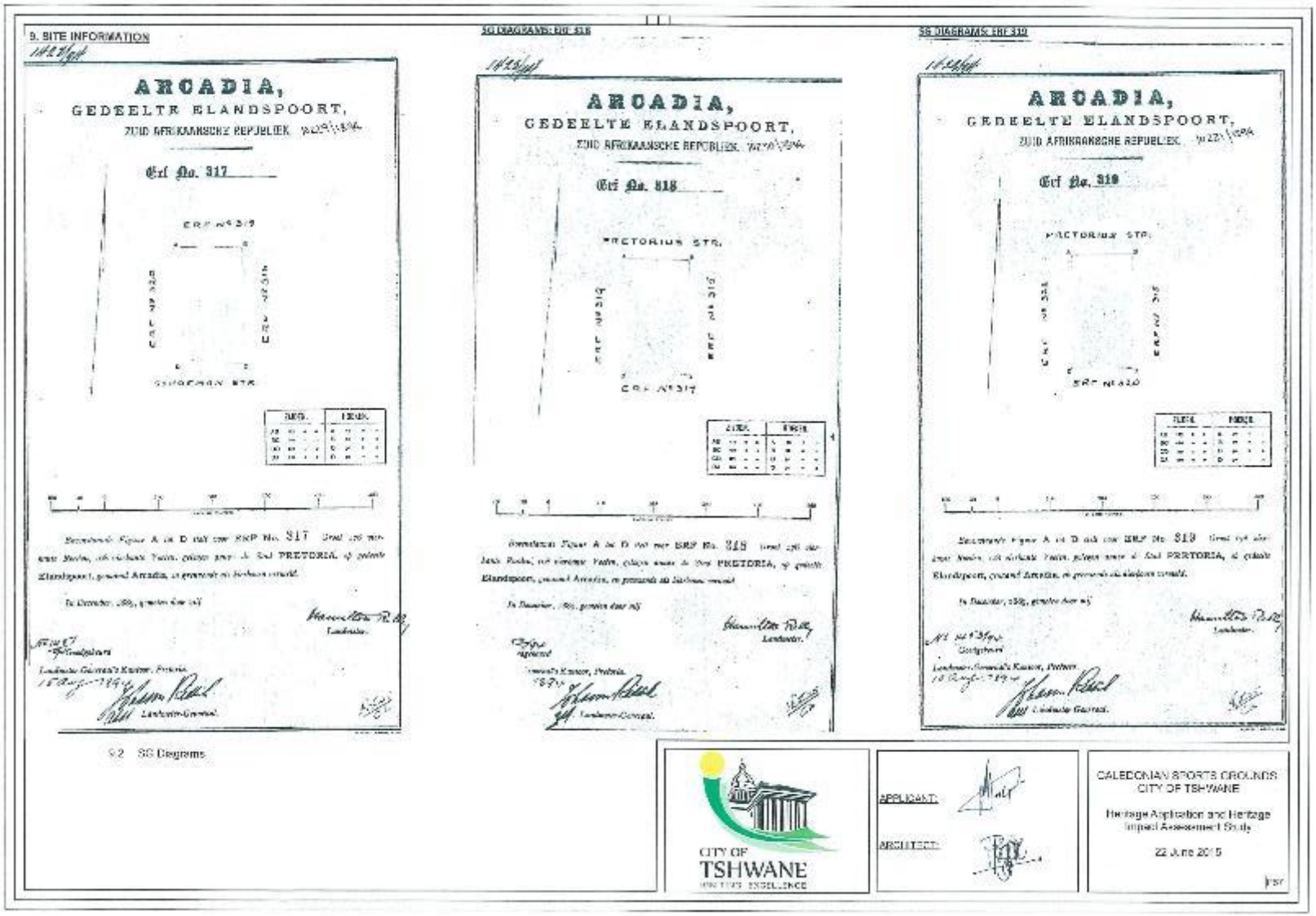
APPLICANT

ARCHITECT

CALEDONIAN SPORTS GROUNDS: CITY OF TSHWANE

Heritage Application and Heritage Impact Assessment Study

22 June 2015



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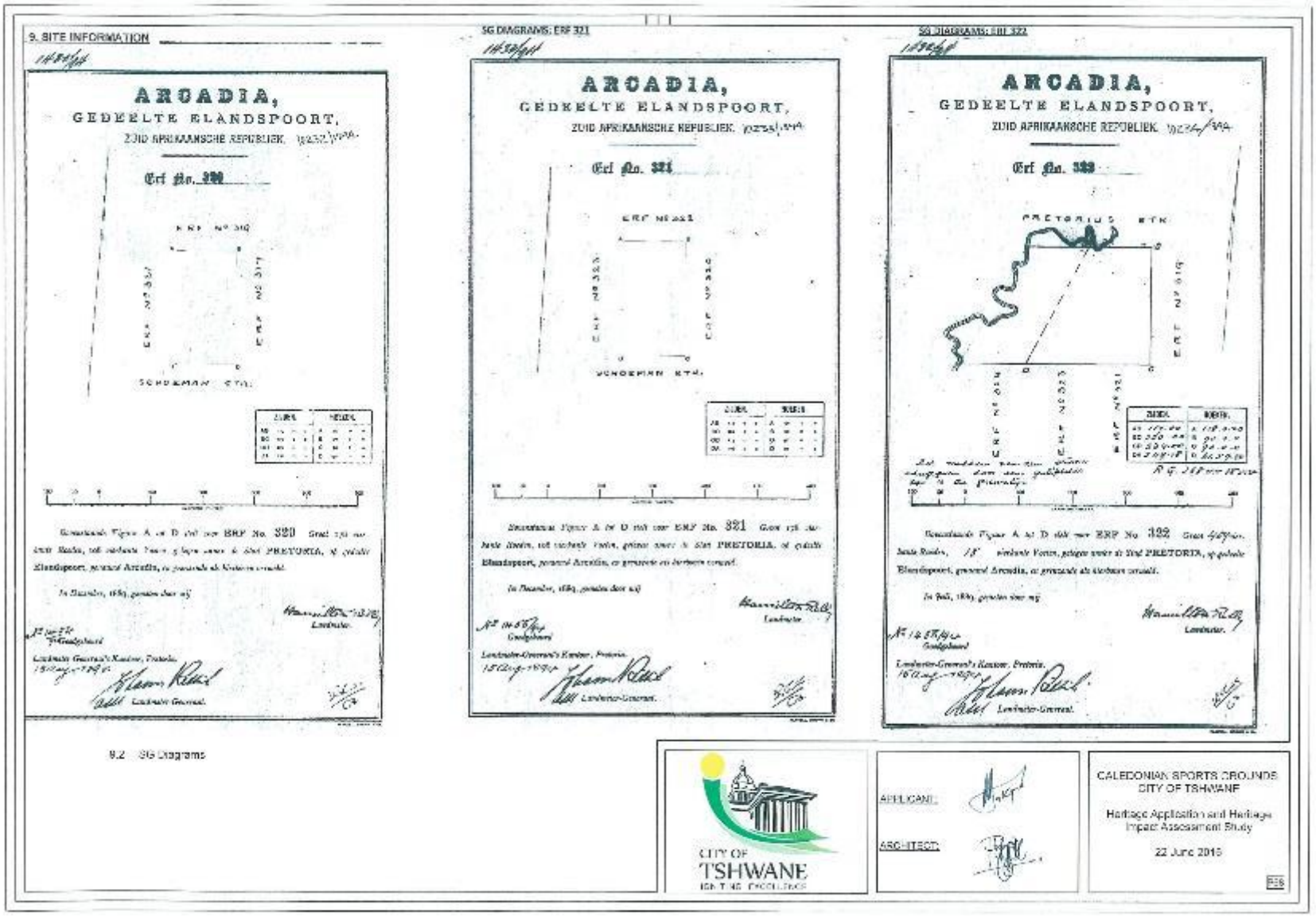
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ZUID AFRIKAANSCHE REPUBLIEK.
Erf No. 320
SCHOEMAN STR.
9.2 SG Diagrams
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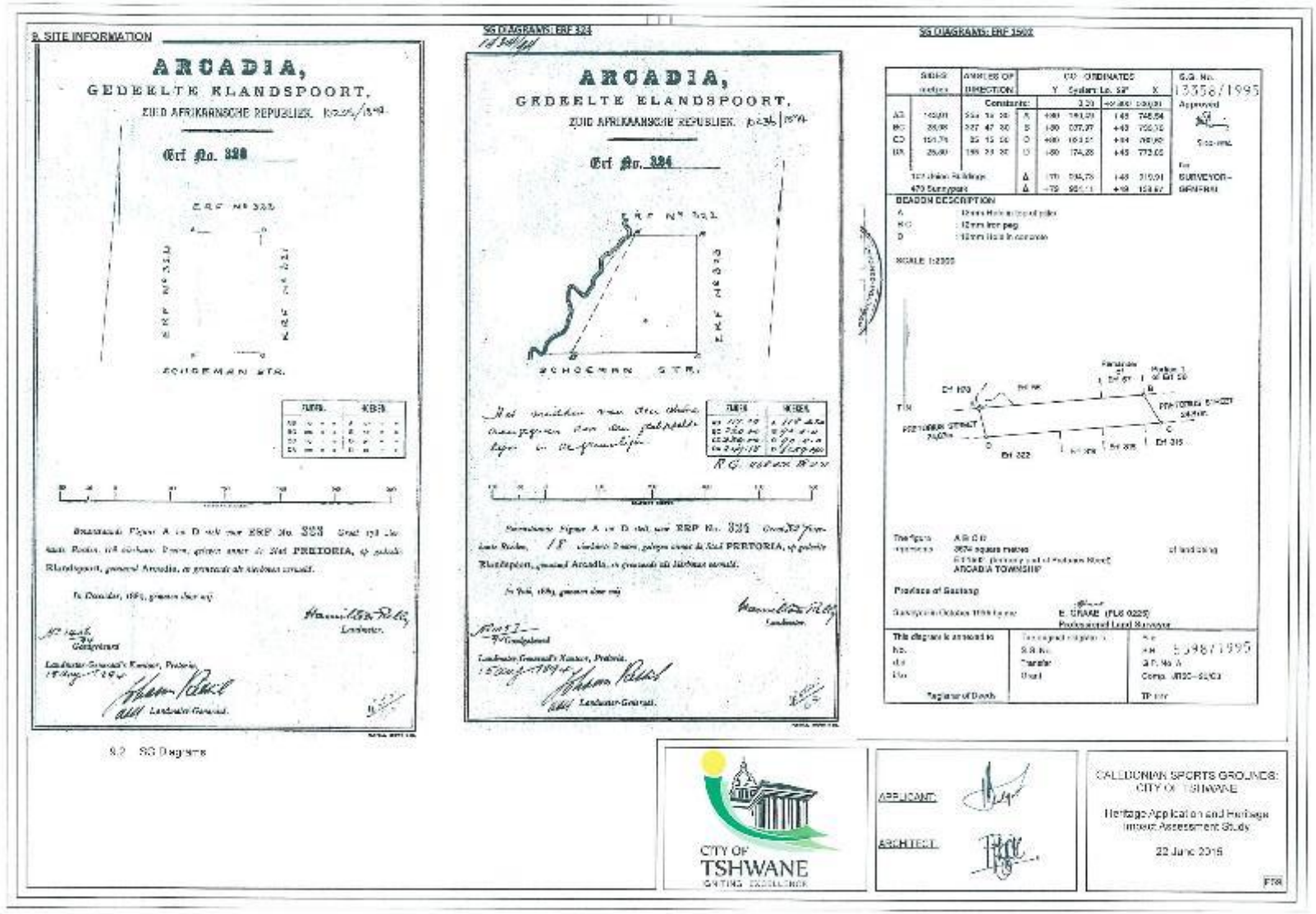
ARCADIA,
GEDEELTE ELANDSPOORT,
ZUID AFRIKAANSCHE REPUBLIEK.
Erf No. 321
VORSTMAN STR.
SG DIAGRAMS: ERF 322
ARCADIA,
GEDEELTE ELANDSPOORT,
ZUID AFRIKAANSCHE REPUBLIEK.
Erf No. 322
PRETORIUS STR.
CITY OF TSHWANE
APPLICANT:
ARCHITECT:
CALEDONIAN SPORTS GROUNDS
CITY OF TSHWANE
Heritage Application and Heritage Impact Assessment Study
22 June 2015



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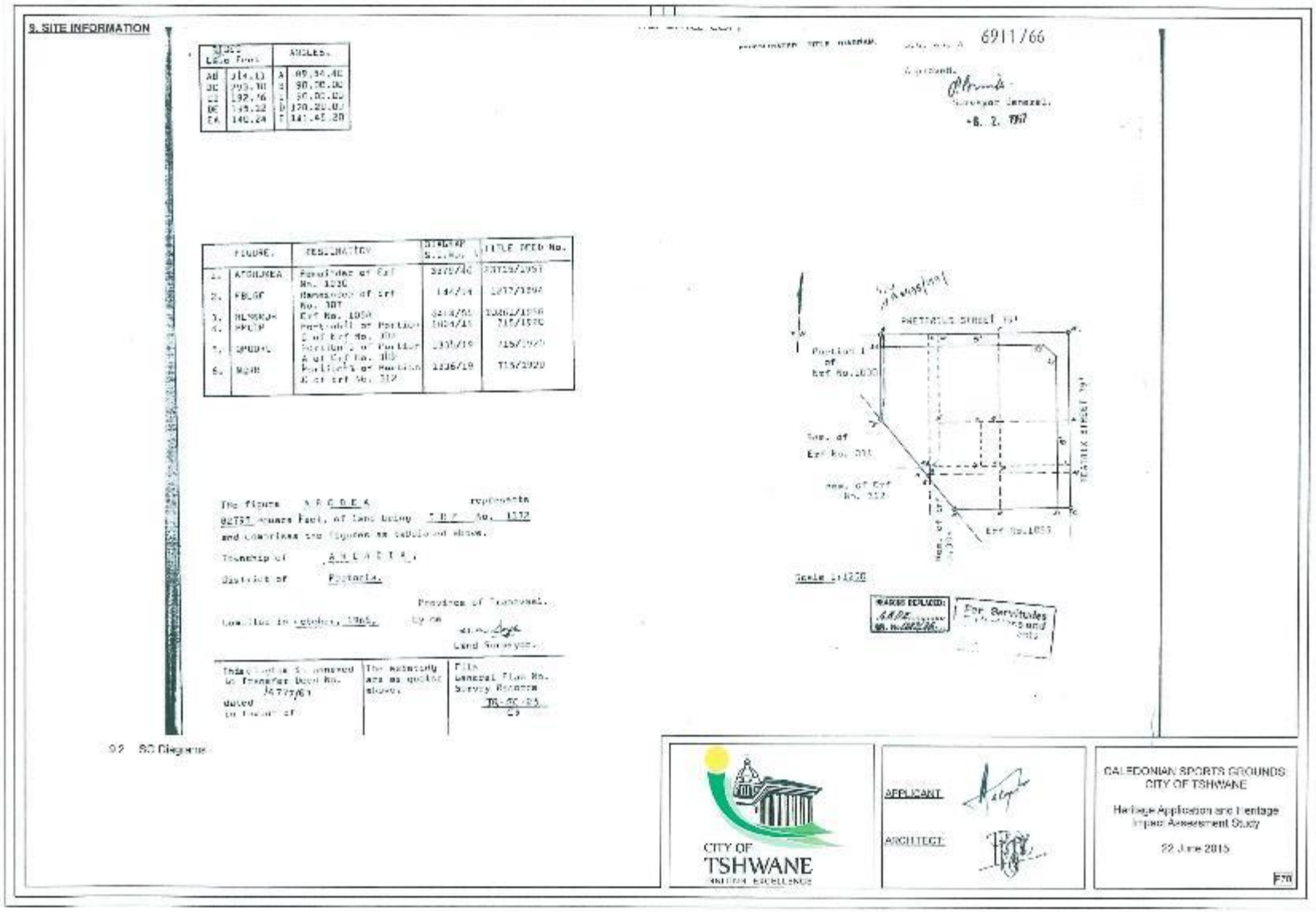
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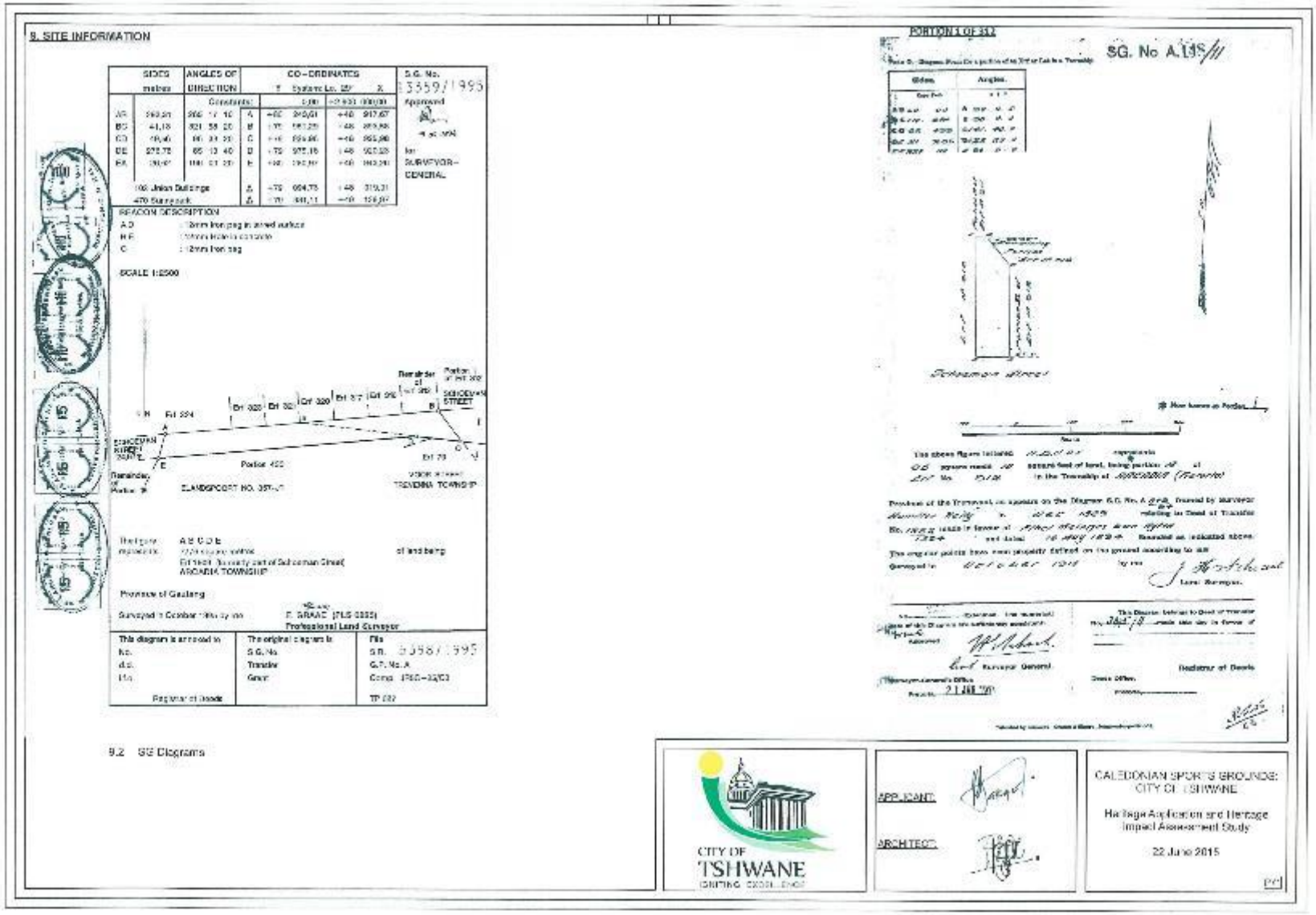
CITY OF TSHWANE
Heritage Application and Heritage Impact Assessment Study
22 June 2015



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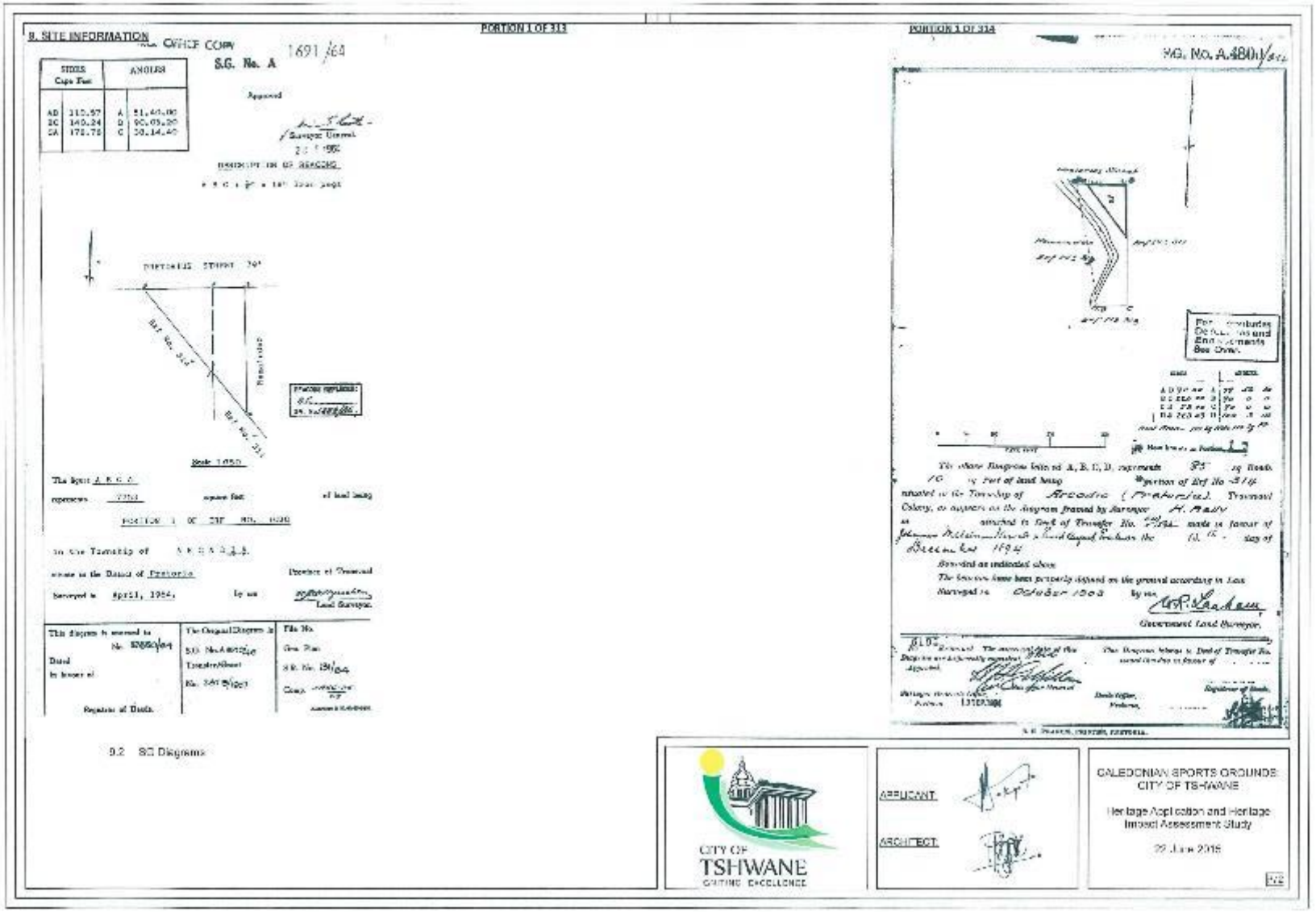

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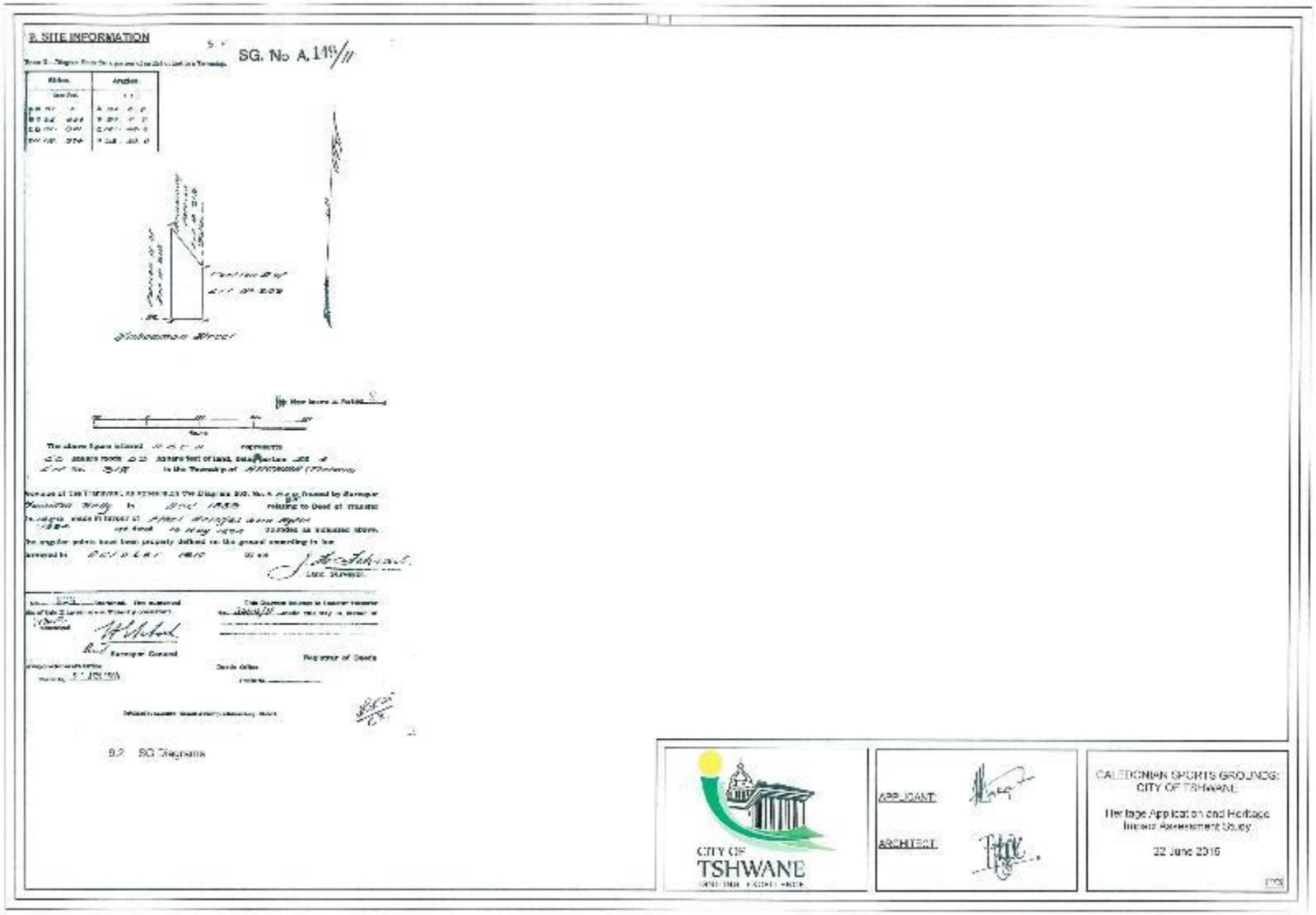

9.2 SG Diagrams

9. SITE INFORMATION

9.3 Title Deeds

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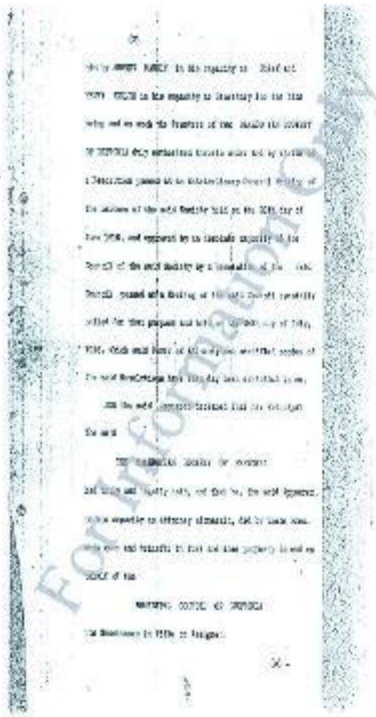
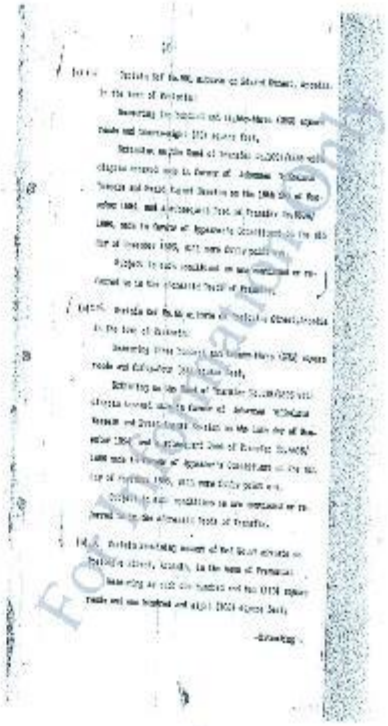
CITY OF TSHWANE

Heritage Application and Heritage Impact Assessment Study

22 June 2018

9. SITE INFORMATION





9.3 Title Deeds

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Heritage Application and Heritage Impact Assessment Study

22 June 2015

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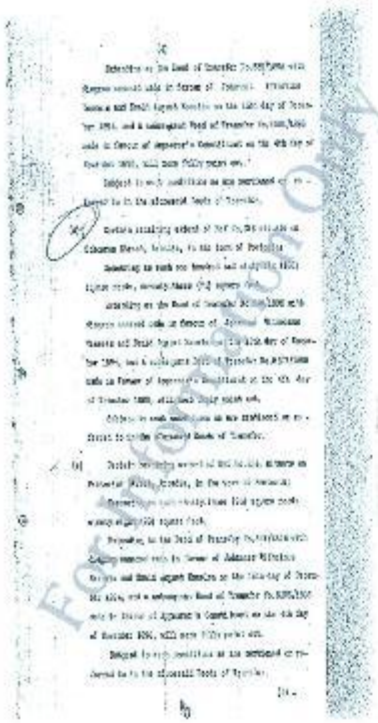

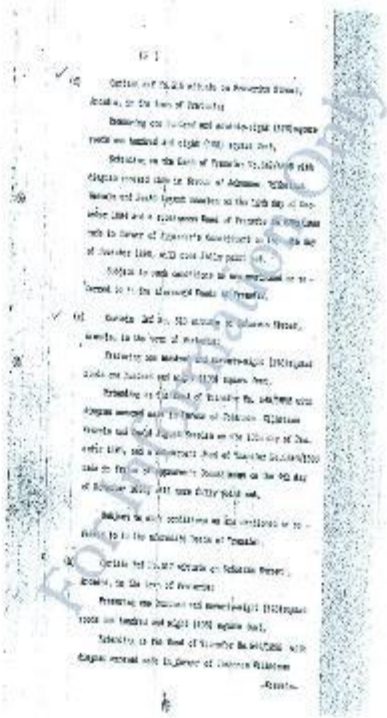

9.3 Title Deeds

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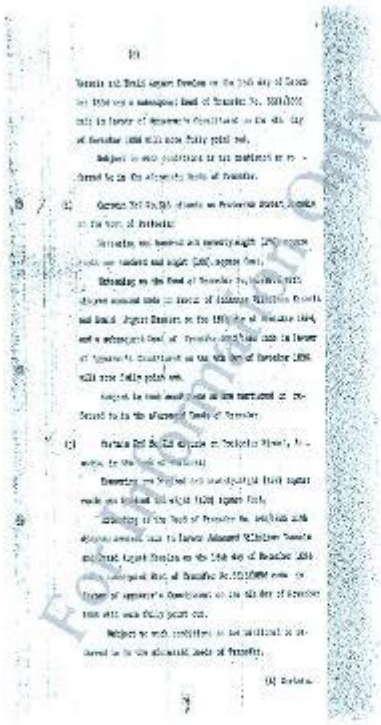
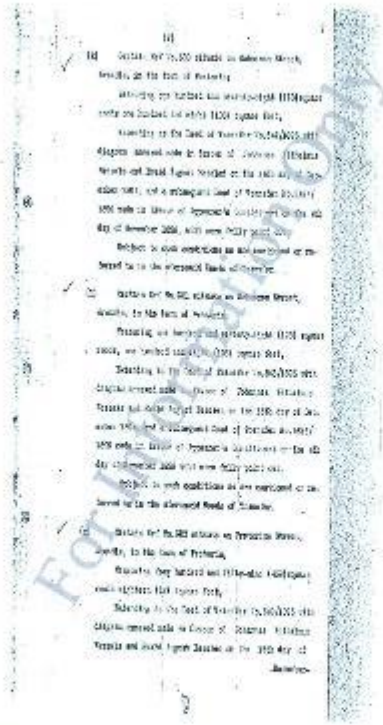
Heritage Application and Heritage Impact Assessment Study

22 June 2016

9. SITE INFORMATION





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Heritage Application and Heritage Impact Assessment Study

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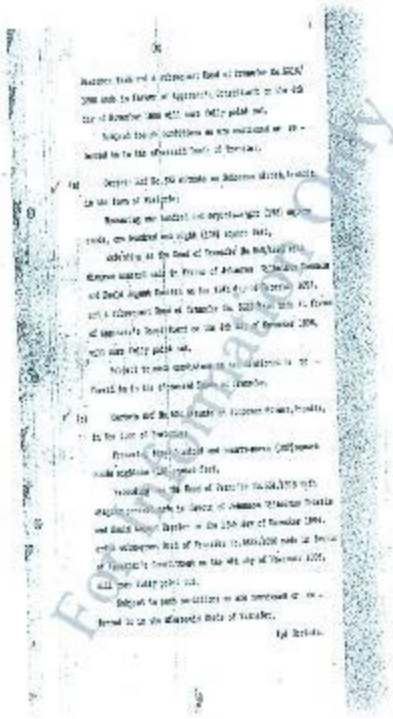
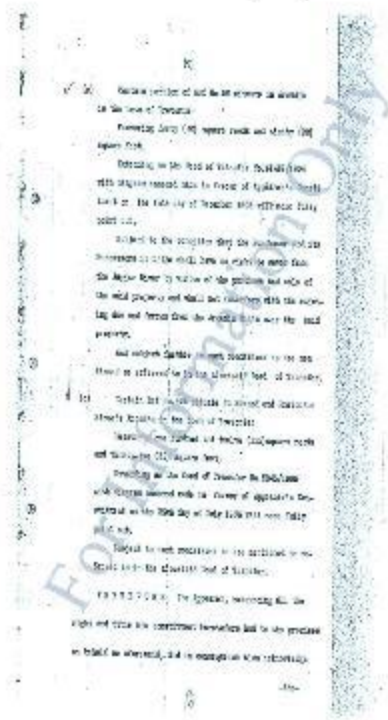
5. SITE INFORMATION





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Heritage Application and Heritage Impact Assessment Study

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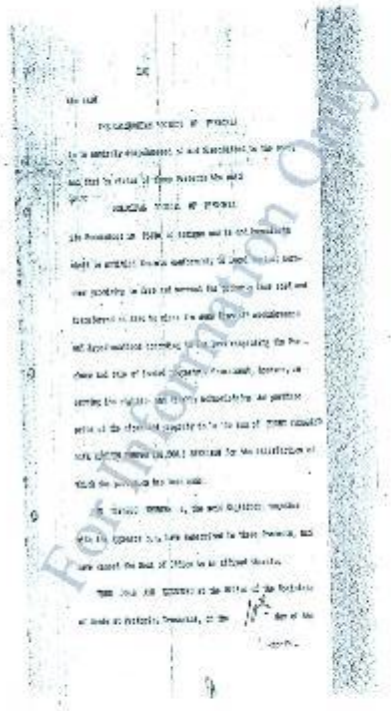
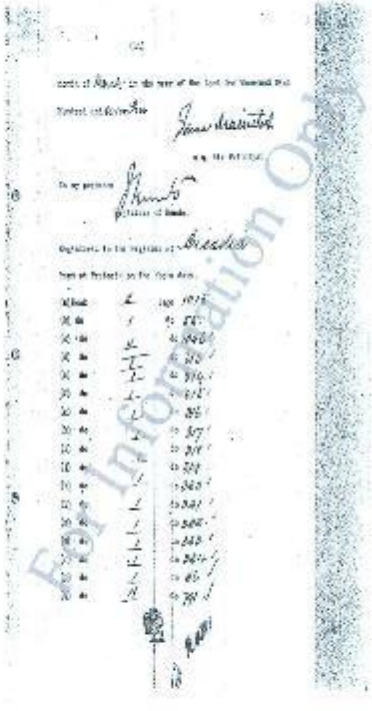
8. SITE INFORMATION





8.3 Title Deeds

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Heritage Application and Heritage Impact Assessment Study

29 June 2015

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9. SITE INFORMATION

9.3 Title Deeds

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Heritage Application and Heritage Impact Assessment Study

22 June 2015

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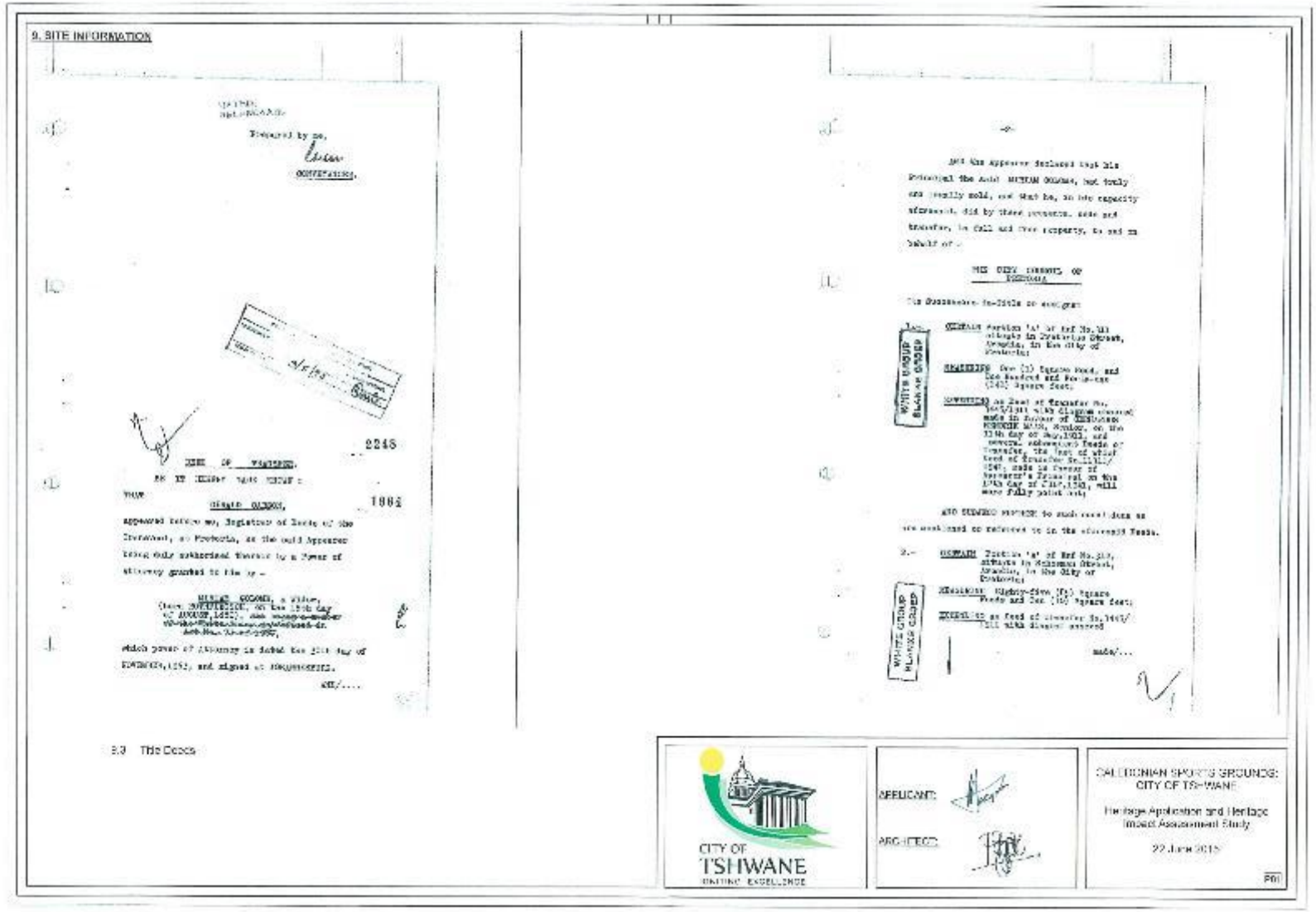
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Heritage Application and Heritage Impact Assessment Study
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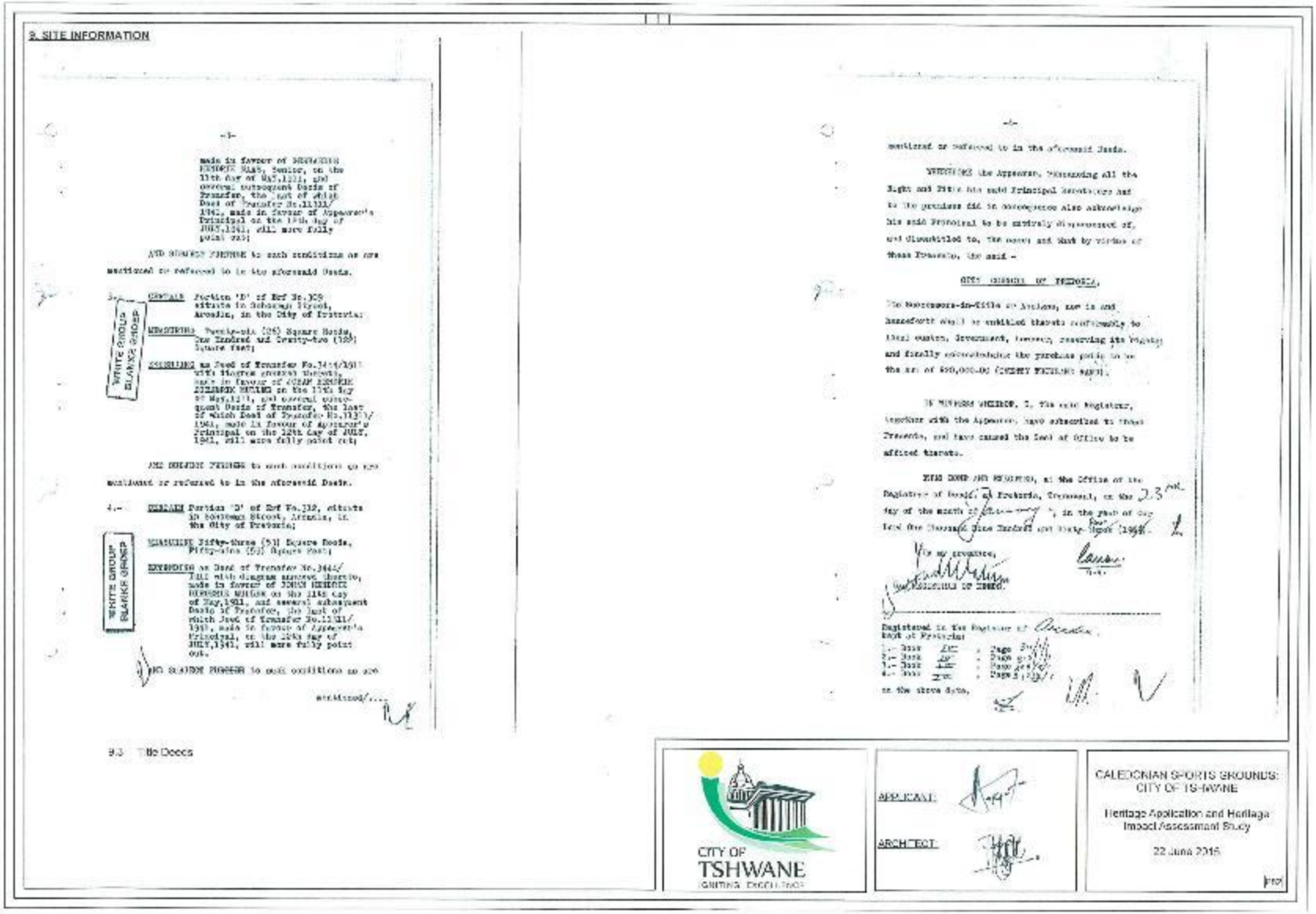

9.3 Title Deeds

CITY OF TSHWANE
IGNITING EXCELLENCE

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ARCHITECT:

CALEDONIAN SPORTS GROUNDS: CITY OF TSHWANE

Heritage Application and Heritage Impact Assessment Study

22 June 2016