



Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

**A REPORT ON A CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE
PROPOSED DEVELOPMENT OF UPMARKET TOURISM ACCOMMODATION ON
THE SELATI RAILWAY BRIDGE, SKUKUZA, KRUGER NATIONAL PARK,
MPUMALANGA PROVINCE**

For:

Kruger Selati (Pty) Ltd

REPORT NO.: AE01810V

By:

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Accredited member of ASAPA (Accreditation number: 166)
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8 March 2018

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Clients are advised not to proceed with any action before receiving the necessary comments from SAHRA.

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EXECUTIVE SUMMARY

Purpose:

The South African National Parks identified the opportunity for the utilization of existing infrastructure associated with the Selati Railway Line and Bridge in and adjacent to the Skukuza Rest Kamp in the Kruger National Park and invited interested investors/developers to submit proposals and to tender for the opportunity. Kruger Selati (Pty) Ltd, a member of the Thebe Group submitted the winning bid and are now in the process of applying for the required environmental authorization to proceed with their development plans.

Archaetnos cc was requested by Kruger Selati (Pty) Ltd to conduct a cultural heritage impact assessment (HIA) for the proposed development of upmarket tourism accommodation on the Selati railway bridge at Skukuza. This is in the Kruger National Park, Mpumalanga Province.

Project description:

The proposed development is planned to be located on the Selati Railway Bridge and within existing footprints adjacent to the Bridge and the Selati Railway Line in and adjacent to the Skukuza Rest Camp in the Kruger National Park at central GPS Co-ordinates 24°59'30.81"S and 31°35'49.15"E. The site is within the Bushbuckridge Local Municipality, the Ehlanzeni District Municipality and the Mpumalanga Province.

Methodology:

The methodology for the study includes a survey of literature and a field survey. The latter was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development.

If required, the location/position of any site was determined by means of a Global Positioning System (GPS), while photographs were also taken where needed. The survey was undertaken by doing a physical survey on foot and covered as much as possible of the area to be studied. Certain factors, such as accessibility, density of vegetation, etc. may however influence the coverage.

All sites, objects, features and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities were determined by means of the GPS. The information was added to the description in order to facilitate the identification of each locality.

Public consultation:

Public consultation was done by the EAP.

Findings:

During the survey three sites/ features of cultural heritage significance were identified.

Recommendations:

1. All three identified sites are regarded as having a field rating of Local Grade IIIB. These should all be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to permit applications lodged with the relevant heritage authority.
2. Site 1 (the railway bridge) and 2 (the locomotive and carriage) should be regarded as integrated components.
3. Both may therefore be utilized for the proposed development. However, strict controls need to be implemented to ensure that it is not damaged in the process.
4. Detailed plans indicating the interventions should be approved by SAHRA and a Cultural Management Plan (CMP) for the sustainable preservation, management and utilisation of both be drafted and approved by SAHRA. The CMP can only be done during and after construction on site in order to facilitate the appropriate conservation, preservation and sustainable management principals related to the historical components of the site.
5. In principle nothing that would be a permanent intervention to the bridge structure should be allowed. The view from the Skukuza rest camp should also be left untouched as far as possible, expect perhaps for minor interventions. It should be noted however that the railway carriages will be placed permanently on the bridge. The exterior of these will be left as close to its historical look and therefore it would enhance the heritage significance of the railway bridge and precinct. It needs to be ensured that no other permanent additions should be allowed. This means that any addition, e.g. lookout platforms and related infrastructure may only be 'hooked on' to the bridge and should be reversible. This indeed is the included in the current project plan.
6. Later additions to the bridge, such as cables and pipes, which have lost its functionality, should be removed. The pump house may be reused and changed since it does not form part of the original construction. The plan indeed is to remove redundant services, e.g. the old telephone line, rusted water pipes etc., but the water supply to the airport from Skukuza must obviously remain.
7. In principle nothing that would be a permanent intervention to both the interior and exterior of the locomotive and carriage currently at the station should be allowed. However, some changes have been made in the past and these needs to be taken into consideration. This means that historical features should be kept as far as possible. Changes should only be allowed when it is entirely unavoidable or when it impacts on features which had already been changed in the past and therefore had already been compromised to some extent.
8. Since the Sabi Bridge site of Steinaecker's Horse has unexcavated sections and is very close to the development, the developer needs to ensure that it is

not impacted. Currently it seems it will not be impacted directly, but negotiations with the concessionaire is still in process. Bearing this in mind, a buffer zone of at least 20 m should be implemented. In order to do this the exact perimeters of the site should be determined.

9. Should it be impossible to avoid the site (even partially) an assessment should be made of what exactly are in danger of being impacted. This section of the site, if not excavated before, should then be excavated in order to document these remains. A final report on the excavations, if implemented, should be submitted to SAHRA.
10. It would be reasonable to include information about all three heritage features and its history in a display at the development. It is an area with a rich history which should be utilised to the benefit of visitors and the public in general. The plan indeed is to have a media facility on the Skukuza side to facilitate interpretative and media exposure. This mitigation within the project will enhance heritage and as such conserve heritage assets that may otherwise deteriorate, as well as expose the history to the public that otherwise may have been overlooked.
11. Resultantly, the developer will have to implement a 'Watching brief' with a heritage expert doing regular inspections of the work during the implementation phase and working together with the team to ensure the above mentioned. The scope for this brief should include the bridge, historical rolling stock and the Sabi Bridge site of Steinaecker's Horse ensuring that the cultural and heritage integrity thereof is not compromised.
12. A final report of interventions, including a CMP, should be delivered to SAHRA on completion of the project.
13. The former SANDF building on the northern side of the bridge is less than 60 years and may therefore be demolished without any further heritage approval. Of course, it may also be utilised as part of the mentioned media facility.
14. It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Due to the density of vegetation it also is possible that some sites may only become known later on. Operating controls and monitoring should therefore be aimed at the possible unearthing of such features. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.

In This regards the following 'Chance find Procedure' should be followed:

- *Upon finding any archaeological or historical material all work at the affected area must cease.*
- *The area should be demarcated in order to prevent any further work there*

until an investigation has been completed.

- *An archaeologist should be contacted immediately to provide advice on the matter.*
- *Should it be a minor issue, the archaeologist will decide on future action, which could include adapting the HIA or not. Depending on the nature of the find, it may include a site visit.*
- *SAHRA's APM Unit may also be notified.*
- *If needed, the necessary permit will be applied for with SAHRA. This will be done in conjunction with the appointed archaeologist.*
- *The removal of such archaeological material will be done by the archaeologist in lieu of the approval given by SAHRA, including any conditions stipulated by the latter.*
- *Work on site will only continue after removal of the archaeological/ historical material was done.*

CONTENTS

	Page
EXECUTIVE SUMMARY	3
CONTENTS	7
CURRICULUM VITAE OF SPECIALIST	8
DECLARATION OF INDEPENDENCE	9
LIST OF ACRONYMS.....	9
1. INTRODUCTION.....	10
2. PROJECT INFORMATION.....	13
3. TERMS OF REFERENCE.....	14
4. LEGISLATIVE REQUIREMENTS.....	14
5. METHODOLOGY	18
6. ASSUMPTIONS, GAPS, RESTRICTIONS, CONDITIONS AND LIMITATIONS	20
7. DESCRIPTION OF THE PHYSICAL ENVIRONMENT	21
8. HISTORICAL CONTEXT.....	30
9. SITES AND FEATURES IDENTIFIED DURING THE SURVEY	33
10.PUBLIC PARTICIPATION.....	50
11. CONCLUSIONS AND RECOMMENDATIONS.....	53
12.REFERENCES.....	55
APPENDIX A – DEFENITION OF TERMS.....	58
APPENDIX B – DEFINITION/ STATEMENT OF SIGNIFICANCE	59
APPENDIX C – SIGNIFICANCE AND FIELD RATING	60
APPENDIX D – PROTECTION OF HERITAGE RESOURCES.....	62
APPENDIX E – HERITAGE MANAGEMENT IMPACT ASSESSMENT PHASES.....	63
APPENDIX F – EXAMPLES OF COMCEPTUAL DESIGN	64

CURRICULUM VITAE OF SPECIALIST: PROF ANTON CARL VAN VOLLENHOVEN

Tertiary education

- BA 1986, University of Pretoria
- BA (HONS) Archaeology 1988 (cum laude), University of Pretoria
- MA Archaeology 1992, University of Pretoria
- Post-Graduate Diploma in Museology 1993 (cum laude), University of Pretoria
- Diploma Tertiary Education 1993, University of Pretoria
- DPhil Archaeology 2001, University of Pretoria.
- MA Cultural History 1998 (cum laude), University of Stellenbosch
- Management Diploma 2007 (cum laude), Tshwane University of Technology
- DPhil History 2010, University of Stellenbosch

Employment history

- *1988-1991*: Fort Klapperkop Military Museum - Researcher
- *1991-1999*: National Cultural History Museum. Work as Archaeologist, as well as Curator/Manager of Pioneer Museum (1994-1997)
- *1999-2002*: City Council of Pretoria. Work as Curator: Fort Klapperkop Heritage Site and Acting Deputy Manager Museums and Heritage.
- *2002-2007*: City of Tshwane Metropolitan Municipality. Work as Deputy Manager Museums and Heritage.
- *August 2007* – present – Managing Director for Archaetnos Archaeologists.
- *1988-2003*: Part-time lecturer in Archaeology at the University of Pretoria and a part-time lecturer on Cultural Resources Management in the Department of History at the University of Pretoria.
- *2014*: Part-time lecturer for the Honours degree in Museum Sciences in the Department of History and Heritage Studies at the University of Pretoria
- *2015*: Appointed extraordinary professor in history at the Mafikeng Campus of the Northwest University

Other

- Published 75 articles in scientific and popular journals on archaeology and history.
- Author and co-author of over 580 unpublished reports on cultural resources surveys and archaeological work. A list of reports can be viewed on www.archaetnos.co.za
- Published a book on the Military Fortifications of Pretoria.
- Contributed to a book on Mapungubwe.
- Delivered more than 50 papers and lectures at national and international conferences.
- Member of SAHRA Council for 2003 – 2006.
- Member of the South African Academy for Science and Art.
- Accredited professional member of Association for South African Professional Archaeologists.
- Accredited professional member of the South African Society for Cultural History (Chairperson 2006-2008; 2012-2014).
- Has been editor for the SA Journal of Cultural History 2002-2004.
- Member of the Provincial Heritage Resources Agency, Gauteng's Council.
- Member of Provincial Heritage Resources Agency, Gauteng's HIA adjudication committee (Chairperson 2012-2019).

ASAPA Accreditation number: 166

SASCH Accreditation number: CH001

DECLARATION OF INDEPENDENCE

I, Anton Carl van Vollenhoven from Archaetnos, hereby declare that I am an independent specialist within the field of heritage management.

Signed:



Date: 8 March 2018

LIST OF ACRONYMS:

AIA – Archaeological Impact Assessment
APM – Archaeology, Palaeontology and Meteorites unit at SAHRA
CMP – Cultural Management Plan
EAP – Environmental Assessment Practitioner
EIA – Environmental Impact Assessment
HIA – Heritage Impact Assessment
PIA – Palaeontological Impact Assessment
SAHRA –South African Heritage Resources Agency

1. INTRODUCTION

The South African National Parks identified the opportunity for the utilization of existing infrastructure associated with the Selati Railway Line and Bridge in and adjacent to the Skukuza Rest Kamp in the Kruger National Park and invited interested investors/developers to submit proposals and to tender for the opportunity Kruger Selati (Pty) Ltd, a member of the Thebe Group submitted the winning bid and are now in the process of applying for the required environmental authorization to proceed with their development plans.

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The proposed development is planned to be located on the Selati Railway Bridge and within existing footprints adjacent to the Bridge and the Selati Railway Line in and adjacent to the Skukuza Rest Camp in the Kruger National Park at central GPS Co-ordinates 24°59'30.81"S and 31°35'49.15"E. The site is within the Bushbuckridge Local Municipality, the Ehlanzeni District Municipality and the Mpumalanga Province.

The client indicated the area to be surveyed. It was surveyed via foot.

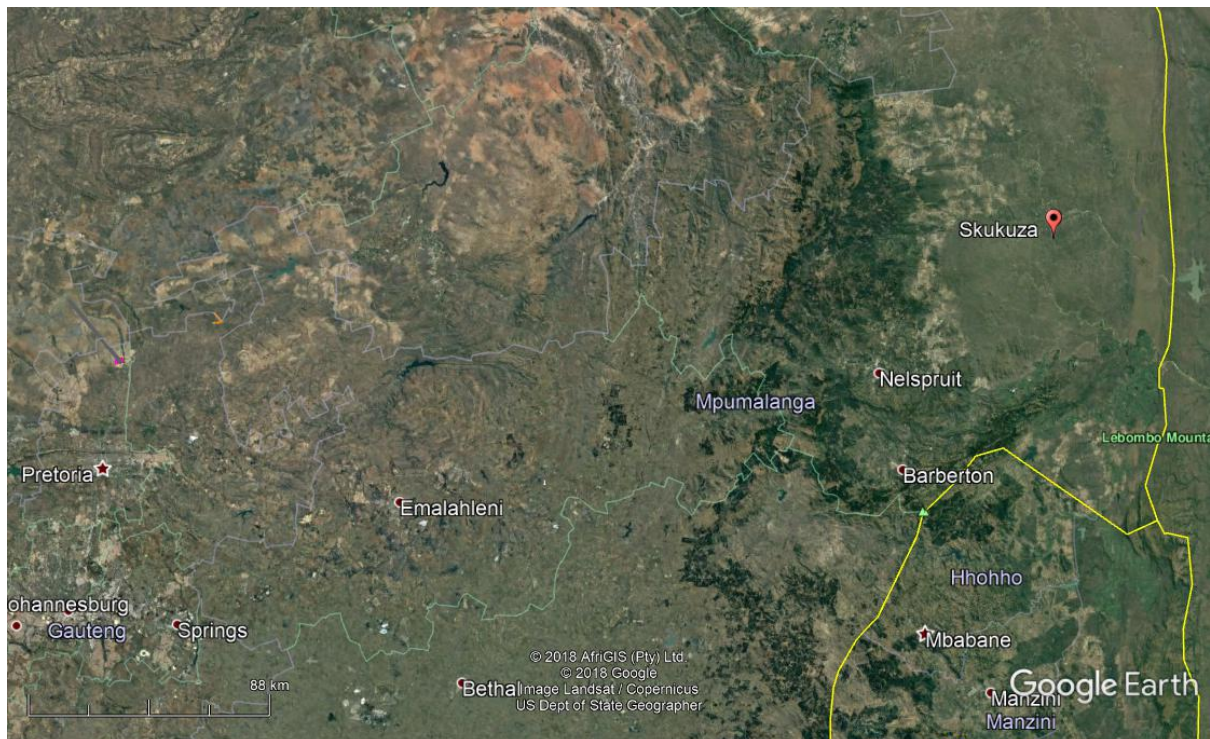


FIGURE 1: LOCATION OF SKUKUZA IN THE KRUGER NATIONAL PARK, MPUMALANGA PROVINCE.

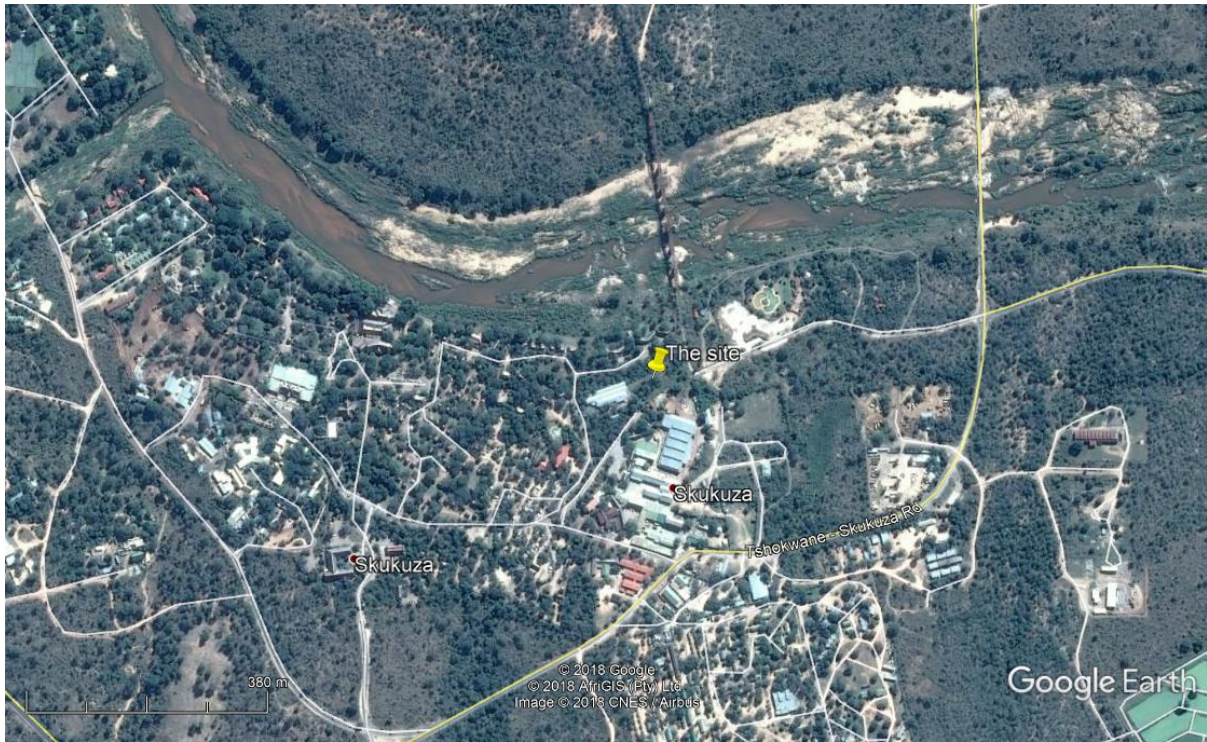


FIGURE 2: LOCATION OF THE SITE IN RELATION TO SKUKUZA.

2. PROJECT INFORMATION

2.1 Project details

The proposed development includes a number of interrelated components (Figure 3A-B – Also see Appendix F with indications of conceptual layout) described as follows:

- Twelve railway carriages, consistent with the historical heritage significance of the Selati Bridge and associated railway infrastructure, will be refurbished and fitted off-site to provide luxury accommodation with two on suite bedrooms per carriage, thus providing a 48-bed upmarket tourism accommodation facility that will be permanently positioned on the Selati Bridge over the Sabie River, adjacent to the Skukuza Rest Camp in the Kruger National Park (see B in Figure 3).
- An additional carriage fitted out as a lounge will be positioned between sleeper carriages four and five (counting from the south).
- A walkway will be placed only on the Western side of the bridge. The West (Skukuza) facing elevation will have obscure shrouded lighting and be the "back" of the "train" to limit negative inward visual impact from Skukuza. i.e., the train all "looks" away from Skukuza to the East.
- On the eastern side of the lounge carriage a deck extending along the length of the carriage plus a 10m x 10m extension, will be constructed on top of the existing pump house structure and a small plunge pool will be positioned in the middle of the deck with space around and adjacent being used for the servicing of food and beverages to guests.

- The existing Selati Restaurant footprint will be refurbished and fitted to provide the following facilities (see A in Figure 3):
 - Parking for both guests and the general public;
 - Guest reception area inclusive of office and luggage and restrooms;
 - A fine dining restaurant for guests;
 - A family restaurant for the general public from which there will be access to the station area where the refurbished Selati Railway Engine may be viewed and there will be access to interpretative and edutainment areas which will highlight the historical value of the train and the railway line; and a
 - Departure/arrival point for guests to be transported to the bridge via the existing pump trolley to a point just south of the sleeper carriages.
- A stationary box carriage positioned on the existing railway tracks just to the north of the sleeper carriages to serve as storage and backdrop for bush diner functions and the departure/return of game drives (see G in Figure 3).
- The existing Waterkant and Nyati guesthouses to be included into the concession and refurbished as upmarket 16 bed guest accommodation in line with the style of the sleeper carriages and the facility as a whole, also to include a lounge and fine dining restaurant for guests, and a spa (see C in Figure 3).
- Replacement accommodation units to be constructed for and at a locality to be identified by SANParks (see D in Figure 3)



FIGURE 3A: LOCATION OF PROJECT COMPONENTS.



FIGURE 3B: SITE LAYOUT.

2.2 Applicant and EAP details

The applicant is Kruger Selati (Pty) Ltd. The EAP compiling the application is EMROSS Consulting (Pty) Ltd – Kevan Zunckel - kevan@emross.co.za

3. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property (see Appendix A).
2. Document the found cultural heritage sites according to best practice standards for heritage related studies.
3. Study background information on the area to be developed.
4. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).
5. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.

6. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.
7. Review applicable legislative requirements.

4. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. The first of these are the National Heritage Resources Act (Act 25 of 1999) which deals with the cultural heritage of the Republic of South Africa. The second is the National Environmental Management Act (Act 107 of 1998) which inter alia deals with cultural heritage as part of the Environmental Impact Assessment process.

4.1 The National Heritage Resources Act

According to the above-mentioned act the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The national estate (see Appendix D) includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and paleontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources.

A Palaeontological Impact Assessment (PIA) is an assessment of palaeontological heritage. Palaeontology is a different field of study, and although also sometimes required by the South African Heritage Resources Agency (SAHRA)¹, should be done by a professional palaeontologist.

The different phases during the HIA process are described in Appendix E. An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial):

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- c. trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or paleontological material or object, or any meteorite; or

¹ Please consult SAHRA to determine whether a PIA is necessary.

- d. bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological material or objects or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

Human remains that are less than 60 years old are subject to provisions of the **National Health Act (Act 61 of 2003)** and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated)

before exhumation can take place. Human remains can only be handled by a registered undertaker or an institution declared under the **National Health Act (Act 61 of 2003)**.

4.2 The National Environmental Management Act

This act (Act 107 of 1998) states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

4.3 The International Finance Corporations' performance standard for cultural heritage

This standard recognizes the importance of cultural heritage for current and future generations. It aims to ensure that clients protect cultural heritage in the course of their project activities.

This is done by clients abiding to the law and having heritage surveys done in order to identify and protect cultural heritage resources via field studies and the documentation of such resources. These need to be done by competent professionals (e.g. archaeologists and cultural historians). Any possible chance finds, encountered during the project development, also needs to be managed by not disturbing it and by having it assessed by professionals.

Impacts on the cultural heritage should be minimized. This includes the possible maintenance of such sites in situ, or when not possible, the restoration of the functionality of the cultural heritage in a different location. When cultural historical and archaeological artifacts and structures need to be removed, this should be done by professionals and by abiding to the applicable legislation. The removal of cultural heritage resources may, however, only be considered if there are no technically or financially feasible alternatives. In considering the removal of cultural resources, it should be outweighed by the benefits of the overall project to the affected communities. Again, professionals should carry out the work and adhere to the best available techniques.

Consultation with affected communities should be conducted. This entails that such communities should be granted access to their cultural heritage if this is applicable. Compensation for the loss of cultural heritage should only be given in extra-ordinary circumstances.

Critical cultural heritage may not be impacted on. Professionals should be used to advise on the assessment and protection thereof. Utilization of cultural heritage

resources should always be done in consultation with the affected communities in order to be consistent with their customs and traditions and to come to agreements with relation to possible equitable sharing of benefits from commercialization.

5. METHODOLOGY

5.1 Survey of literature

A survey of literature was undertaken in order to obtain background information regarding the area. Sources consulted in this regard are indicated in the bibliography.

5.2 Reference to other specialist desktop studies

No previous heritage studies were conducted in the area (SAHRIS database). However, research has been conducted around Skukuza, at least since 1986. The information is included below.

5.3 Public consultation and stakeholder engagement

Public consultation was done by the EAP during the Basic Assessment Phase. The detail is included in the Draft Basic Assessment Report which also offers a 30-day public comment period which will include heritage related comments.

5.4 Physical field survey

The survey was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development. One regularly looks a bit wider than the demarcated area, as the surrounding context needs to be taken into consideration.

If required, the location/position of any site was determined by means of a Global Positioning System (GPS)², while photographs were also taken where needed. The survey was undertaken by doing a physical survey via off-road vehicle and on foot and covered as much as possible of the area to be studied (Figure 4).

It needs to be mentioned that the site is extremely disturbed due to it forming part of the existing rest camp and area where infrastructure was built years ago to service the camp, staff village and operational matter of the Kruger Park. However, due to it being a nature reserve, natural vegetation is present. Pioneer plant species, such as weeds, were however visible. Factors, such as density of vegetation, etc. may therefore have influenced the coverage. In this instance the under footing varied between very open areas with good visibility to areas with extremely dense medium to high vegetation cover. In such instances, which are very limited, both the vertical and horizontal visibility was influenced negatively.

² A Garmin Oregon 550 with an accuracy factor of a few meters.

However, since almost the entire area here is disturbed, it is seen as a low risk area for heritage sites. This of course excludes the railway bridge, which is a well-known landmark and historical feature at Skukuza. The size of the area surveyed is approximately 4 Ha and the survey took 2 hours to complete.

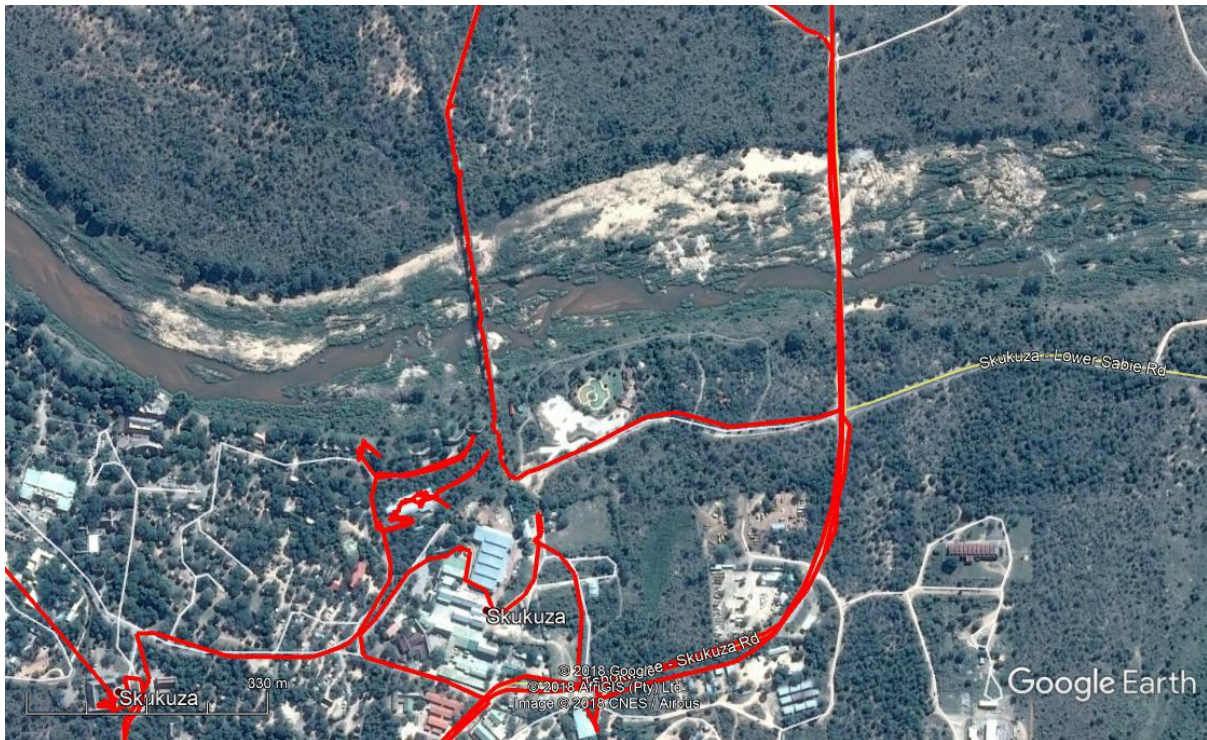


FIGURE 4: TRACK ROUTE OF THE SURVEY.

5.5 Documentation

All sites, objects, features and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities were determined by means of the GPS. The information was added to the description in order to facilitate the identification of each locality.

5.6 Evaluation of Heritage sites

The evaluation of heritage sites is done by giving a field rating of each (see Appendix C) using the following criteria:

- The unique nature of a site
- The integrity of the archaeological deposit
- The wider historic, archaeological and geographic context of the site
- The location of the site in relation to other similar sites or features
- The depth of the archaeological deposit (when it can be determined or is known)
- The preservation condition of the site
- Uniqueness of the site and

- Potential to answer present research questions.

6. ASSUMPTIONS, GAPS, RESTRICTIONS, CONDITIONS AND LIMITATIONS

The following conditions and assumptions have a direct bearing on the survey and the resulting report:

1. Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity (Appendix A). These include all sites, structures and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.
2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.
3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see Appendix C).
4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.
5. All recommendations are made with full cognizance of the relevant legislation.
6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might occur.
7. In this particular case the surveyed area has been largely disturbed by recent human activities. Accordingly, these areas are seen as low risk areas to reveal heritage sites. However, disturbance may also indicate the presence of heritage features since the disturbance may be the result of past human utilization of the site.
8. Factors, such as density of vegetation, may have influenced the coverage. This was however limited to small sections within the surveyed area.

7. DESCRIPTION OF THE PHYSICAL ENVIRONMENT

The topography of the surveyed area is reasonably flat with a slight fall towards the Sabie River, which cuts roughly through the middle thereof. The Sabie River is one of the large water courses flowing in an eastern direction in this part of Mpumalanga (Figure 5).

As indicated, only a few patches with natural vegetation still exist here (Figure 6), but even these show signs of former disturbance. The section of the surveyed area on the northern side of the river is less disturbed (Figure 7).

The section to the south of the bridge is largely disturbed. This includes the day visitors picnic area, just east of the project site (Figure 8), infrastructure such as the distribution centre (Figure 9) and transformer.

The following areas, all disturbed, were investigated (Figure 3):

- A. The existing Selati restaurant building purpose build circa late 1980s to resemble a station and to house the historic locomotive and carriages of which only one remains (Figure 10-16).
- B. The bridge, discussed below.
- C. The existing Waterkant guest houses to be included in the accommodation offering by the concessionaire and the existing buildings refurbished appropriately (Figure 17). This building is younger than 60 years of age.
- D. Replacement accommodation. The concessionaire is required to construct replacement accommodation on this site (Figure 18).
- E. Access from the restaurant, lounge, boma facilities for concession guests, to and from accommodation on the bridge, is via the existing rail track (Figure 19) and an adjacent paved pedestrian / golf cart path and using the existing "pomp trolley", a hand powered cart on rails (Figure 20) which will be electrified (solar).
- F. Existing yard and portion of the existing Distribution Centre is to be leased from SANP to provide storage and laydown, work areas during construction and as a service area and theatre / media centre for guests in operational phase (Figure 9). Access of staff and deliveries etc. (construction and operations) is via the existing service routes and eliminates all disruptive non-visitor traffic through the Skukuza camp.
- G. South: Offloading and final fitment area for rail carriages delivered by road. Temporary tracks to be laid on the existing foundation / ballast of the original rail line (Figure 21). All major refurbishment of carriages will be done off site in JHB prior to delivery and setting on tracks, shunting into position.
North: Position proposed for a stationary box carriage as storage and backdrop for bush diner functions and departure return of game drives (subject to agreement with neighbouring concessionaire). Rail tracks existing as a continuation of those over the bridge (Figure 22).
- H. Existing position of transformer for connection to existing Skukuza electrical supply with warranted capacity as well as approximate connection to existing sewer reticulation for centralized treatment at existing facility (Figure 14).



FIGURE 5: THE SABIE RIVER WITH THE SKUKUKAZA REST CAMP ON ITS SOUTHERN BANK.



FIGURE 6: AREA WITH SOME NATURAL VEGETATION REMAINING. THIS IS ALSO POSITION E ON THE MAP (FIGURE 3A).



FIGURE 7: GENERAL VIEW OF VEGETATION ON THE NORTHER SIDE OF THE RIVER.



FIGURE 8: DAY VISITORS AREA.



FIGURE 9: DISTRIBUTION CENTRE.



FIGURE 10: ENTRANCE TO THE SELATI RESTAURANT, BUILT DURING THE 1980'S.



FIGURE 11: WINDOW AT BAR OF THE SELATI RESTAURANT.



FIGURE 12: COUNTER INSIDE RESTAURANT.



FIGURE 13: BOMA AT RESTAURANT.



FIGURE 14: EASTERN ENTRANCE TO SELATI RESTAURANT. THE ELECTRICITY TRANSFORMER IS JUST TO THE EAST THEREOF.



FIGURE 15: KITCHEN OF RESTAURANT.



FIGURE 16: TOILET FACILITIES IN RESTAURANT.



FIGURE 17: WATERKANT GUEST HOUSE.



FIGURE 18: AREA WHERE NEW ACCOMMODATION WILL BE BUILT.



FIGURE 19: EXISTING RAILWAY TRACK BETWEEN THE RESTAURANT AND THE BRIDGE.



FIGURE 20: TROLLEY TO BE UTILISED WITH NEW DEVELOPMENT.



FIGURE 21: ACCESS TO THE BRIDGE ON THE SOUTHERN SIDE OF THE RIVER. NOTE THE CONCRETE STRUCTURE WHICH FORMS PART OF THE WATER PUMPING SYSTEM.



FIGURE 22: ACCESS TO THE BRIDGE ON THE NORTHERN SIDE OF THE RIVER.

8. HISTORICAL CONTEXT

Although only a few heritage related projects had been undertaken in the Kruger National Park, the area had been reasonably well researched (SAHRIS Database;

Archaetnos Database). In order to be able to get a better understanding of the past in this area, it is necessary to give a background regarding the different phases of human history.

8.1 Stone Age

The Stone Age is the period in human history when lithic material was mainly used to produce tools (Coertze & Coertze 1996: 293). In South Africa the Stone Age can be divided in three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. The division for the Stone Age according to Korsman & Meyer (1999: 93-94) is as follows:

Early Stone Age (ESA) 2 million – 150 000 years ago
Middle Stone Age (MSA) 150 000 – 30 000 years ago
Late Stone Age (LSA) 40 000 years ago – 1850 - A.D.

The closest Stone Age occurrence found to the surveyed area is a Late Stone Age site close to Skukuza, called SK4 (Bergh 1999: 4). Also, a large number of rock art sites are found in the Kruger National Park, especially in the southern section (Eloff 2007: 12).

The close vicinity of water sources and ample grazing would have made it a prime spot for hunting and obtaining water during the past. Therefore, one may assume that Stone Age people probably would have moved through the area.

8.2 Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts (Coertze & Coertze 1996: 346). In South Africa it can be divided in two separate phases according to Van der Ryst & Meyer (1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D.
Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.
Middle Iron Age (MIA) 900 – 1300 A.D.
Late Iron Age (LIA) 1300 – 1840 A.D.

The historical atlas indicates that the closest Early Iron Age site to the surveyed area is one at Plaston (Bergh 1999: 6). Another site has been excavated close to Nelspruit (Esterhuysen & Smith 2007: 12). One however needs to take note that not many Early Iron Age sites have been identified thus far in South Africa.

Iron Age sites were also identified in the south of the Kruger National Park (Eloff et.al. 2007: 35-39). Jordaan is currently working on two Early Iron Age sites close to Skukuza, namely SK17 and TSH1 (SAHRIS Database). Bergh (1999: 7) indicates that as many as 48 Late Iron Age sites have been identified here. This work was mainly done by Meyer (1986). Again, it can be stated that the good grazing and access water in the area would have provided a good environment for Iron Age people.

One of the early trade routes passed reasonably close to the area that was surveyed. It was between Dalagoa Bay in Mozambique and went through Sabie Poort, following the Sabie River to Magashulaskraal in the west (Bergh 1999: 9).

8.3 Historical Age

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write.

At the beginning of the 19th century the area to the north of current day Swaziland was inhabited by the Swazi (Eloff et.al. 2007: 63; Bergh 1999: 10; Bornman 1994: 2-6). During the Difaquane (1823-1837) the Swazi moved further inland as a result of land becoming available (Bergh 1999: 11). This indicates that historical Iron Age people probably utilized this environment in the past.

The first early traveler who visited this area was Lieutenant Jan Steffer in 1723 who were exploring the country inland from Delagoa Bay up to the Crocodile River. He was followed by Francois de Cuiper who moved through the Komati Poort in 1725 ending his journey at Gomondwane, south of the Lower Sabie rest camp (Punt 1975:44-78; Bergh 1999: 12, 116). More than a century later, in 1844, the Voortrekker leader Andries Hendrik Potgieter also used the route through Komatipoort (Tempelhoff 1982: 5).

White farmers only settled towards the east of the Kruger Park after 1845 in an area traded from the Swazi in 1846 (Bergh 1999: 16, 17, 130). Most of the land, especially the eastern section (which includes the park), remained government land. Towards the south, the permanent settlement of white farmers only occurred after the establishment of a railway system through Komati Poort in 1887 (Tempelhoff 1982: 6-7).

During the Anglo-Boer War, the Steinaecker's Horse volunteer unit, served as border control and set up outposts from Swaziland, through Komatipoort and up to just north of Letaba. They were involved in a few skirmishes against the Boers. One of their main posts was at Sabi Bridge, today known as Skukuza (see Van Vollenhoven 2010).

On 30 March 1898, the ZAR (South African Republic or Transvaal) government proclaimed the Sabie Reserve as a protected area. This was situated between the Crocodile and Sabie Rivers. During the Anglo-Boer War (1899-1902) it was deproclaimed. In 1902 additional land stretching up to the Olifants River was set aside for nature conservation. It was added to the Sabie Reserve which was re-proclaimed in 1903. Also, in 1903, the Shingwedzi Reserve was set aside for protection. This lies

north of the Letaba River. In 1923 the area between the Olifants and Letaba Rivers were added. All of these areas were consolidated in 1926 and proclaimed as the Kruger National Park (De Graaff 1999:265-266).

9. SITES AND FEATURES IDENTIFIED DURING THE SURVEY

Three sites/ features of historical significance were identified in or close to the surveyed area (Figure 23).

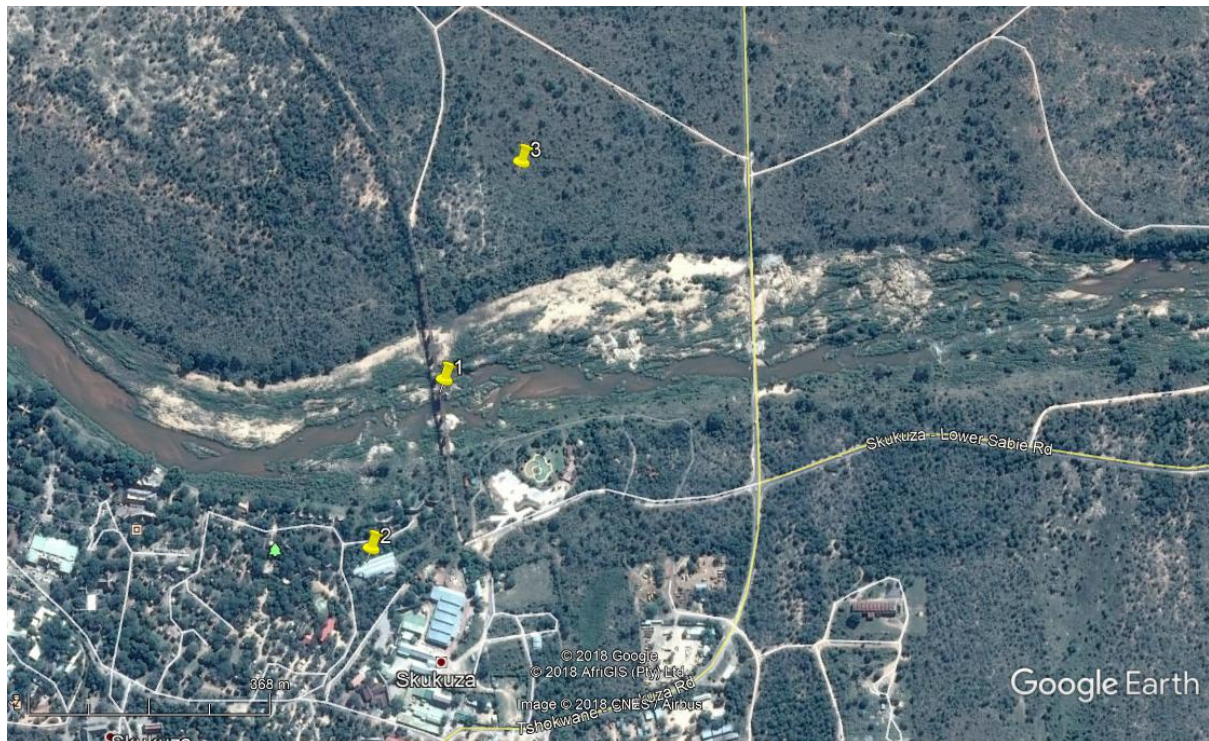


FIGURE 23: THE THREE SITES/ FESTURES OF HERITAGE SIGNIFICANCE.

Site 1 – The Railway Bridge

GPS Coordinates: 24°59'28.02"S; 31°35'48.68E

This is the railway bridge over the Sabie River (Figure 24-25). It Was built in 1912 and therefore is older than 60 years. It is the most important heritage element within the development.

The bridge is in a reasonably good condition. Although somewhat rusted, the steel construction (Figure 26) and sandstone pillars (Figure 27-28) are still sturdy and likely will still be able to hold its weight as well as that of the proposed railway carriages.

A few changes were made to the bridge over the years (Figure 29). These mainly include services, which are mostly reversible. One exception is a pump house on the

bridge (Figure 30). The pump house dates to the late 1950's/ early 1960's and therefore is younger than 60 years of age. However, it does not have any heritage significance.



FIGURE 24: NORTHERN VIEW OF THE RAILWAY BRIDGE.



FIGURE 25: VIEW OF THE RAILWAY BRIDGE TAKEN FROM SKUKUZA (SOUTH-WEST).



FIGURE 26: DETAILED VIEW OF THE BRIDGE.



FIGURE 27: NOTE THE SANDSTONE PILLARS OF THE BRIDGE.



FIGURE 28: DETAILED VIEW OF ONE OF THE PILLARS OF THE BRIDGE.



FIGURE 29: NOTE THE PIPE ON THE RIGHT-HAND SIDE AS WELL AS CABLES, AN INDICATION OF LATER, BUT REVERSIBLE ADDITIONS TO THE BRIDGE.



FIGURE 30: THE PUMP HOUSE ON THE BRIDGE. THE PUMP HOUSE DATES TO THE LATE 1950'S/ EARLY 1960'S AND THEREFORE IS YOUNGER THAN 60 YEARS OF AGE. HOWEVER, IT DOES NOT HAVE ANY HERITAGE SIGNIFICANCE.

The railway bridge forms part of the historical Selati Railway Line, which was an extension to the Eastern Railway Line between Pretoria and Komatipoort. The latter was built since the ZAR wanted to make use of Lourenco Marques (Maputo) as harbour so that they did not need to rely on the harbours under British rule (Cape Town and Durban). In 1874 the Government appointed President TF Burgers to enter into discussions with the Portuguese Government in this regard (Bornman 2004: 1).

Eventually the railway engineers commenced surveying the route on the ZAR side in 1884. In 1884 the government drafted an agreement with the 'Nederlandsche Zuid-Afrikaansche Spoorweg-Maatskappij' (NZASM or ZASM) to build the line. The line was first completed from Lourenco Marques to Komatipoort and construction on the ZAR side started in 1891, after which it was continued towards Pretoria. On 20 October 1894 the first test train from the east reached Pretoria (Bornman 2004: 1-3).

The railway line was therefore completed in 1894 (Kruger National Park n.d.: 4). During the construction of the line many people and livestock lost their lives because of tsetse fly, malaria, being eaten by lions or other reasons (Bornman 2004: 3).

The Selati line was needed to link the Selati Gold Fields close to Gravelotte with the main line (Bornman 2004: 4; Kruger National Park n.d.: 4). The line was built to link the Soutpansberg with the Eastern Line via the Selati Goldfields. The name Selati is derived from Chief Shalati, who lived near this river in the region of Ofcolaco. The proposed route, from Komatipoort in the south to Zoekmekaar in the north, passed through untamed bushveld with almost no habitation (Woolmore 2006: 17; Bornman

2004: 4; Kruger National Park n.d.: 4). Construction began in 1893 (Bornman 2004: 4; Kruger National Park n.d.: 4).

After 120 km of track had been laid, the 'Big Railway Scandal', as it was headlined in 1894, brought all work on the Selati line to an abrupt stop at the Sabie River (Woolmore 2006: 18; Bornman 2004: 4; Kruger National Park n.d.: 5). The then uncompleted Sabi Bridge later became known as 'Reserve', named after the Sabi Game Reserve, today known as Skukuza (Bornman 2004: 4; Kruger National Park n.d.: 5). The incomplete line ran from Komatipoort to a point known as Kilo 104, about 21 miles north of the Sabi River (Woolmore 2006: 18).

The outbreak of the Anglo-Boer War (1899-1902) was responsible for another delay, although the completed section briefly attained military importance in 1900. The ZAR Government used the completed section to the Sabi Bridge to organise and store its rolling stock, as it was ideally situated away from the advancing British forces. Towards the end of the war the British managed to get control of the line, but after the end of the war the Selati line still remained uncompleted for a few more years (Bornman 2004: 4; Kruger National Park n.d.: 5). This railway line between Komatipoort and Sabi Bridge was however also used by Steinaecker's Horse on a weekly basis during the War (Stevenson-Hamilton 1952: 28).

Only after the Union of South Africa came into being in 1910 and the three railway administrations (Cape, Natal and Central Railways) amalgamated to form the South African Railways, work on the Selati line started again and by 1912 the line reached Tzaneen (Woolmore 2006: 18; Bornman 2004: 4; Kruger National Park n.d.: 5). The inaugural ceremony was held on 25 October 1912, starting at Komatipoort with festivities at all major stops (Bornman 2004: 4; Kruger National Park n.d.: 5).

The Selati Goldfields came to an end, placing a burden on the economic viability of the line. This led to a promotional drive which included the very popular roundabout through Eastern and Northern Transvaal, called "Round in 9 days". In 1925 the first of these tourist train journeys took place, starting at Johannesburg station. The highlight of the tour was the section through the Kruger National Park with a camp fire concert at Huhla station, near Reserve (Skukuza) (Bornman 2004: 4; Kruger National Park n.d.: 5). This station is north of the Sabie Bridge.

However, traffic on the line increased resulting in high costs involved in maintaining the line, as well as the killing of wild animals. It was therefore decided to divert the line to outside the Park. In 1972 the last train travelled through the Park. It was drawn by steam engine No 3638. This locomotive was donated to the Park in October 1978 by the SAR Administration and stands at Skukuza as a monument to the rail builders of yesteryear (Bornman 2004: 4; Kruger National Park n.d.: 6).

Cultural significance Table

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	Y	H
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	Y	H
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Y	H
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	N	
Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group	Y	M
Its importance in demonstrating a high degree of creative or technical achievement at a particular period	Y	VH
Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	N	
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	Y	H
Sites of significance relating to the history of slavery in South Africa	N	
Reasoned assessment of significance using appropriate indicators outlined above:	6 – High	

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information

- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 6 \text{ (High)} \times 6$$

$$= 36$$

This site is therefore regarded as having a field rating of Local Grade IIIB. The site should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority.

In this particular case, Site 1 may therefore be utilized for the proposed development. However, strict controls need to be implemented to ensure that it is not damaged in the process. Detailed plans indicating the interventions should be approved by SAHRA and a CMP for the sustainable preservation, management and utilisation of the site be drafted and approved by SAHRA.

In principle nothing that would be a permanent intervention to the bridge structure should be allowed. Later additions to the bridge, such as cables and pipes, which have lost its functionality, should be removed. The pump house may be reused and changed since it does not form part of the original construction. The plan indeed is to remove redundant services, e.g. the old telephone line, rusted water pipes etc., but the water supply to the airport from Skukuza must obviously remain.

The placing of railway carriages therefore is a good example, but it needs to be ensured that no other permanent additions should be allowed. This means that any addition, e.g. lookout platforms, should make use of existing features and may only be 'hooked on' to the bridge. The view towards the Skukuza rest camp should also be left untouched, expect perhaps for minor interventions.

Later additions to the bridge, such as cables and pipes should be removed. The pump house may be reused and changed since it does not form part of the original construction (it was only added during the late 1950's/ early 1960's).

Therefore, the developer will have to implement a 'Watching brief' with a heritage expert doing regular inspections of the work and working together with the team to ensure the above mentioned. A final report of interventions, including a CMP, should be delivered to SAHRA on completion of the project.

Site 2 – The Steam Locomotive

GPS Coordinates: 24°59'36.64"S; 31°35'44.79"E

As indicated above, this locomotive was used in the last trip through the Kruger Park when the railway line was decommissioned in 1972. This locomotive, no. 3638, was donated to the Park in October 1978. It therefore commemorates an historical event and as such has heritage significance.

This particular locomotive is a Class 24 and was originally built as no. 26350 in 1949. It was combined with tree carriages from the same time period (a kitchen, dining car and lounge car) and became part of the newly built Selati Restaurant complex during the 1980's. A fire in 1995 however destroyed two of the carriages. Only the lounge car remained (<http://steam-locomotives-south-africa.blogspot.co.za>).

The locomotive is in a reasonable condition but needs some restoration work. This goes for both the interior as the exterior (Figure 31-35). It is a pity for instance that SANParks left it open for animals to enter and mess inside.



FIGURE 31: FRONT OF THE LOCOMOTIVE.



FIGURE 32: SIDE VIEW.



FIGURE 33: THE NUMBER OF THE LOCOMOTIVE – 3638.



FIGURE 34: RAILWAY CARRIAGE AT THE SELATI RESTAURANT.



FIGURE 35: INTERIOR OF THE CARRIAGE.

Cultural significance Table:

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	Y	MH
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	Y	VH (it seems to be one of only two remaining locomotives from this period in time)
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Y	H
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	Y	H
Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group	N	
Its importance in demonstrating a high degree of creative or technical achievement at a particular period	Y	VH
Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	N	
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	Y	MH
Sites of significance relating to the history of slavery in South Africa	N	
Reasoned assessment of significance using appropriate indicators outlined above:		6 – High

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information

- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 6 \text{ (High)} \times 6$$

$$= 36$$

The locomotive is therefore regarded as having a field rating of Local Grade IIIB. It should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority.

In this particular case, it should be regarded as an integrated component of the history and heritage of the railway bridge and may therefore be utilized for the proposed development. However, strict controls need to be implemented to ensure that it is not damaged in the process. Detailed plans indicating the interventions should be approved by SAHRA and included in the CMP as discussed above.

In principle nothing that would be a permanent intervention to both the interior and exterior should be allowed. However, some changes have been made in the past and these needs to be taken into consideration.

Therefore, the locomotive and carriage should be included as part of the 'Watching brief' to be implemented. A final report of interventions should be delivered to SAHRA on completion of the project.

Site 3 – Steinaecker's Horses' Sabi Bridge post

GPS Coordinates: 24°59'17"S; 31°35'53"E (central coordinate)

This site lies approximately 80 m towards the east of the northern side of the bridge (G North on Figure 3 – the storage and backdrop facility for bush diners as well as game drive departure point). Although no direct impact is expected, it is likely that this infrastructure will have an indirect impact on the site, and this will likely last during the operational phase of the project as well (Figure 36-39).



FIGURE 36: STORAGE LITY USED BY THE FOREMER SA DEFENCE FORCE. THIS LIES BETWEEN THE RAILWAY TRACK AND THE STEINAECKER'S HORSE SITE.



FIGURE 37: VEGETATION ALONG THE RAILWAY TRACK IN THE DIRECTION OF THE STEINAECKER'S HORSE SITE.



FIGURE 38: THE NORTHERN EMBANKMENT OF THE SABIE RIVER. THE EDGE OF THE STEINAECKER'S HORSE SITE LIES APPROXIMATELY 30 M NORTH.



FIGURE 39: ONE OF THE EXCAVATED FEATURES AT THE SABI BRIDGE SITE OF STEINAECKER'S HORSE. THIS ONE PROBABLY HAVE LINKS TO BOTH THE WAR AND THE BUILDING OF THE RAILWAY.

Steinaecker's Horse was a volunteer military unit that fought on the side of the British. It operated mainly in the Lowveld and Swaziland (Pienaar 1990: 343). Apart from its

role during the War, it created a suitable environment for the establishment of the Kruger National Park. It therefore is an important part of the history of the park.

The Sabi Bridge post is one of a number of outposts established by the unit. The unit was formed by Francis Christiaan Ludwig von Steinaecker (Van Vollenhoven et.al.1998: 6). They occupied the site since 1900 and between 1901 and 1902 operated the train between Komatipoort and Kilo 104. The railway bridge was not yet completed, but a temporary wooden bridge on a diversion line was used (Woolmore 2006: 18).

After September 1902 the blockhouse at the site, built by Steinaecker's Horse (south of the temporary bridge), was used by Major J Stevenson-Hamilton as his office, when he started working as the first warden of the Park (Stevenson-Hamilton 1952: 55-56).

The Steinaecker's Horse unit and some of its members greatly influenced the history of the Park. This refers to their using of the site, later to become known as Skukuza, but mostly their efforts to prevent local people from indiscriminate hunting activities in the area. In fact, the second-in-command of Steinaecker's Horse, Major A Greenhill-Gardyne, wrote a report about the preservation of the wildlife in the area. Not only did this report put an end to these practices since it clearly stated rules to the members of Steinaecker's Horse to stop them from these practices, but it was also used as a guide when the Park was started after the Anglo Boer War (Van Vollenhoven 2010: 43-46). In fact, Stevenson-Hamilton relied heavily on this document in establishing principles for the preservation of wildlife in the area.

Some of the members of Steinaecker's Horse were later employed as game rangers in the park as they knew the area and the local people well. These included EG (Gaza) Gray, and the famous HC (Harry) Wolhuter as well as some of the black troops (unfortunately unnamed) who associated with them (Van Vollenhoven 2010: 43-46).

The site was also later used by the former SA Defence Force. A small storage room linked to this period is found here. It has no heritage significance but can perhaps be reused.

Cultural significance Table:

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	Y	H
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	Y	M
Its potential to yield information that will contribute to an	Y	H

understanding of South Africa's natural or cultural heritage		
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	Y	M
Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group	N	
Its importance in demonstrating a high degree of creative or technical achievement at a particular period	Y	M
Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	N	
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	Y	H
Sites of significance relating to the history of slavery in South Africa	N	
Reasoned assessment of significance using appropriate indicators outlined above:		5 – Medium-High

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 5 \text{ (Medium-High)} \times 4$$

$$= 20$$

The Sabi Bridge Post of Steinaecker's Horse locomotive is therefore regarded as having a field rating of Local Grade IIIB. It should be included in the heritage register

and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority.



In this particular case, the site has been researched as part of a project involving Steinaecker's Horse. However, the site was not excavated to its full extent. It would be reasonable to include information about the site and its history in a display at the development, where information on the railway line should also be included.

Since the site is very close to the development, the developer also needs to ensure that it is not impacted. A buffer zone of at least 20 m should be implemented. However, it would be necessary to determine the exact site perimeters. As part of the indicated 'Watching brief' to be implemented, the heritage specialist should ensure that the site is not encroached on.

Should it be impossible to avoid the site (final plans on the layout of the development is not yet available) an assessment should be made of what exactly are in danger of being impacted. This section of the site, if not excavated before, should then be excavated in order to document these remains. A final report on the excavations/ watching brief should be submitted to SAHRA.

10. PUBLIC PARTICIPATION

Newspaper notices were placed by the EAP on 26 January 2018 in the Lowvelder and on 2 February 2018 in the Hoedspruit Herald (Figure 40-41). Notices were also placed at various locations in the Skukuza Rest Camp and at some of the entrance gates to the Park (Figure 42). As indicated earlier comments can still be made as part of the Draft Basic Assessment Report process.

<p>0935 TOWN PLANNING</p>  <p>NOTIFICATION OF LAND DEVELOPMENT APPLICATION IN TERMS OF THE NKOMAZI SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2015.</p> <p>Wes, GAP Development Planners have lodged a land development application in terms of Section 56(1) of the Nkomazi Spatial Planning and Land Management By-law, 2015 for the establishment of an industrial township on Portion 58 of the farm Komatipoort Townlands 182-JU. The subject property is situated along the southern side of the N4 National Road approximately 41.6 km from Malelane, with GPS Coordinates: 25°26'42.4"S</p>	<p>and 31°55'37.2"E. The purpose of the application is to allow for an industrial development which will form part of the Nkomazi Special Economic Zone.</p> <p>Particulars of this application will lie for inspection during normal office hours at Head of Department: Planning and Development, Nkomazi Local Municipality, Attention: Jan Mashela, 12 Impala Street, Malelane, 1320, (19 February 2018, as calculated 30 days from 19 January 2018).</p> <p>Objections to or representations in respect of the application must be lodged in writing to the above address or to The Municipal Manager, Nkomazi Local Municipality, Private Bag X101, Malelane, 1320, no later than 19 February 2018.</p> <p>Applicants Contact Details: Name: GAP Development Planners Physical Address: 71 Van Wijk Street, Nelspruit Phone: 013-752-7513 Email: admin@gapdevelopments.co.za T: A005279</p>	 <p>KENNISGEWING VAN GRONDONTWIKKELINGS- AANSOEK IN GEVOLGE DIE NKOMAZI RUIMTELIKE BEPLANNING EN GRONDGEbruiksBESTUUR BY-WET, 2015</p> <p>Ons, GAP Development Planners het 'n grondontwikkelingsaansoek in terme van Artikel 56(1) van die Nkomazi Ruimtelike Beplanning en Grondgebruiksbestuur By-wet 2015 ingedien vir die stigting van 'n dorp op Gedeelte 58 van die plaas Komatipoort Townlands 182-JU. Die bogenoemde eiendom is geleë Suid van die N4 Nasionale Pad ongeveer 41.6 km vanaf Malelane, by die volgende GPS Koordinasies: 25°26'42.4"S en 31°55'37.2"E. Die doel van die aansoek is om toe te laat vir 'n industriële ontwikkeling wat sal deel vorm van die</p>	<p>Nkomazi Special Economic Zone. Besonderhede van die aansoek en ondersteunende dokumentasie is verkrygbaar by die Hooft van die Departement: Beplanning en Ontwikkeling, Nkomazi Plaaslike Munisipaliteit, Aandag: Jan Mashela, 12 Impala Straat, Malelane, 1320, (19 Februarie 2018 soos bereken 30 dae vanaf 19 Januarie 2018).</p> <p>Besware ten opsigte van die aansoek mag nie later nie as 19 Februarie 2018, skriftelik by bovermelde adres of by die Munisipale Bestuurder, Nkomazi Plaaslike Munisipaliteit, Privaatstak X101, Malelane, 1320, ingedien word.</p> <p>Applikant se Kontakbesonderhede: Naam: GAP Development Planners Fisiese Adres: Van Wijkstraat 71, Nelspruit Tel: 013-752-7513 E-pos: admin@gapdevelopments.co.za T: A005280</p>
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KENNISGEWING VAN GRONDONTWIKKELINGSAANSOEK IN GEVOLGE DIE MBOMBELA BYWET OP RUIMTELIKE BEPLANNING EN GRONDGEbruiksBESTUUR

Ons, Smit en Fisher Planning (Pty) Ltd, het 'n aansoek CM/16/00005 om grondontwikkeling ingedien ingevolge die Mbombela Bywet op Ruimtelike Beplanning en Grondgebruiksbestuur vir die toestemming van Erf 546, West Acres Uitbreiding 4 geleë te Zebrinasingel 29.

Die oogmerk van die aansoek is vir die toestemming tot die gebruik van Erf 546, West Acres, Nelspruit, Mpumalanga vir die oprigting van 'n selfoonmas en basisstasie.

'n Afskrif van die aansoek en ondersteunende dokumentasie is verkrygbaar gedurende normale kantoorure by die kantoor van Die Senior Bestuurder, Kantoer 205, Burger-sentrum, 1 Nelstraat, Mbombela, 1201 Kontaknommer: 013-759-2185.

Geskrewe kommentaar of besware tesame met die redes vir beswaar moet ingedien word in die voorgeskrewe formaat aan: Die Munisipale Bestuurder, Posbus 45, Mbombela, 1200 of by die Registrasie-afdeling van Rekords, Eerste verdieping, aan: registry@mbombela.gov.za nie later as 26 Februarie 2018.

Die formaat vir die kommentaar vir besware is beskikbaar by die kantoor van Die Senior Bestuurder Grondgebruiksbestuur, by die bogenemde adres of op die Munisipaliteit se webwerf (www.mbombela.gov.za).

Enige persoon wat nie kan lees of skryf nie mag enige personeel van die kantoor van Die Senior Bestuurder Grondgebruiksbestuurafdeling, gedurende kantoorure raadpleeg en bystand sal aan sodanige persoon verleen word om die beswaar of kommentaar saam te stel.

Smit & Fisher Planning (Pty) Ltd	Melkstraat 371	Tel: 012-346-2340
Posbus 908	Nieuw Muckleneuk	Fax: 012-346-0638
Groenkloof	0181	Epos: jason@sfplan.co.za
0027		

TAS318


NOTICE: APPLICATION FOR ENVIRONMENTAL AUTHORISATION

Kruger Selati (Pty) Ltd, is applying in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and the Environmental Impact Assessment Regulations, 2014 to the Chief Directorate: Integrated Environmental Authorisations of the National Department of Environmental Affairs; for environmental authorisation at the Basic Assessment level, to develop a 48 bed tourism facility comprised of 12 railway carriages and a lounge carriage on the Selati Railway Bridge over the Sabie River adjacent to the Skukuza Rest Camp in the Kruger National Park, at the GPS co-ordinates 24°59'28.93"S and 31°35'48.71"E. In addition to this the existing Waterkant Guest Houses will be refurbished as upmarket tourism accommodation comprising of 12 beds with associated lounge and dining facilities. These two guest houses will be replaced by the development of a 12 bed guest house available for use by the general public just to the west of the existing Nyati Guest House.

The development as a whole will reflect the historical and heritage value of the Selati Railway Line and will include additional facilities within the footprint of the existing Selati restaurant building, which is to the south of the Bridge and within the boundaries of the Skukuza Rest Camp, such as themed restaurants for both the general public and for exclusive use of the overnight guests to the facility, themed edutainment and interpretative areas for the general public and reception facilities for the overnight guests. These additional components may function independently of the upmarket tourism accommodation described above and are not part of the application for environmental authorization. To the north of the Bridge it is proposed that a stationary box carriage be positioned on the existing railway tracks to serve as storage and backdrop for bush diner functions and the departure/return of game drives.

The Skukuza Rest Camp in the Kruger National Park falls within the Bushbuckridge Local Municipality within the Ehlanzeni District Municipality (DC32) which is in the Mpumalanga Province.

You are invited to register as an Interested and Affected Party by contacting the Environmental Assessment Practitioner as per the details provided below:

<p>Kevan Zunckel of Emross Consulting (Pty) Ltd. Address: 7 Anthonia Road, Hilton, 3245 Tel: 033-343-1739 Fax: 086-517-5582 Cell: 082-929-4270 Email: kevan@emross.co.za</p> 

In order to ensure that you are identified as an interested and/or affected party, if you so wish, please submit your name, contact information and interest in the above mentioned project to the contact person given above within 30 days of the publication date of this advertisement, i.e. before 26 February 2018. As part of this process a Heritage Impact Assessment is also being prepared by Archaetnos CC. Any interested or affected party who wishes to comment on this is invited to do so in writing to the Heritage Consultant, Archaetnos, at antonv@archaetnos.co.za before the above date.

TAS318

FIGURE 40: NOTICE IN THE LOWVELDER, 26 JANUARY 2018 (IN GREEN).

NOTICE: APPLICATION FOR ENVIRONMENTAL AUTHORISATION

Kruger Selati (Pty) Ltd, is applying in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and the Environmental Impact Assessment Regulations, 2014 to the Chief Directorate: Integrated Environmental Authorisations of the National Department of Environmental Affairs; for environmental authorisation at the Basic Assessment level, to develop a 48 bed tourism facility comprised of 12 railway carriages and a lounge carriage on the Selati Railway Bridge over the Sabie River adjacent to the Skukuza Rest Camp in the Kruger National Park, at the GPS co-ordinates 24°59'28.93"S and 31°35'48.71"E. In addition to this the existing Waterkant Guest Houses will be refurbished as upmarket tourism accommodation comprising of 12 beds with associated lounge and dining facilities. These two guest houses will be replaced by the development of a 12 bed guest house available for use by the general public just to the west of the existing Nyati Guest House.

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You are invited to register as an Interested and Affected Party by contacting the Environmental Assessment Practitioner as per the details provided below:

Kevan Zuncel of Emross Consulting (Pty) Ltd.

Address: 7 Annthia Road, Hilton, 3245

Tel: 033-3431739

Fax: 086 517 5582

Cell: 082 929 4270

Email: kevan@emross.co.za.



In order to ensure that you are identified as an interested and/or affected party, if you so wish, please submit your name, contact information and interest in the above mentioned project to the contact person given above within 30 days of the publication date of this advertisement, i.e. before 26 February 2018. As part of this process a Heritage Impact Assessment is also being prepared by Archaetnos CC. Any interested or affected party who wishes to comment on this is invited to do so in writing to the Heritage Consultant, Archaetnos, at antonv@archaetnos.co.za before the above date.

FIGURE 41: WORDING OF NOTICES.



FIGURE 42: PUBLIC NOTICE AT THE SKUKUZA CAMP RECEPTION.

11. CONCLUSION AND RECOMMENDATIONS

The survey of the indicated areas was completed successfully. As indicated three sites of cultural heritage significance were identified.

The following is recommended:

1. All three identified sites are regarded as having a field rating of Local Grade IIIB. These should all be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to permit applications lodged with the relevant heritage authority.
2. Site 1 (the railway bridge) and 2 (the locomotive and carriage) should be regarded as integrated components.
3. Both may therefore be utilized for the proposed development. However, strict controls need to be implemented to ensure that it is not damaged in the process.
4. Detailed plans indicating the interventions should be approved by SAHRA and a Cultural Management Plan (CMP) for the sustainable preservation, management and utilisation of both be drafted and approved by SAHRA. The CMP can only be done during and after construction on site in order to facilitate the appropriate conservation, preservation and sustainable management principals related to the historical components of the site.
5. In principle nothing that would be a permanent intervention to the bridge structure should be allowed. The view from the Skukuza rest camp should also be left untouched as far as possible, expect perhaps for minor interventions. It

should be noted however that the railway carriages will be placed permanently on the bridge. The exterior of these will be left as close to its historical look and therefore it would enhance the heritage significance of the railway bridge and precinct. It needs to be ensured that no other permanent additions should be allowed. This means that any addition, e.g. lookout platforms and related infrastructure may only be 'hooked on' to the bridge and should be reversible. This indeed is included in the current project plan.

6. Later additions to the bridge, such as cables and pipes, which have lost its functionality, should be removed. The pump house may be reused and changed since it does not form part of the original construction. The plan indeed is to remove redundant services, e.g. the old telephone line, rusted water pipes etc., but the water supply to the airport from Skukuza must obviously remain.
7. In principle nothing that would be a permanent intervention to both the interior and exterior of the locomotive and carriage currently at the station should be allowed. However, some changes have been made in the past and these needs to be taken into consideration. This means that historical features should be kept as far as possible. Changes should only be allowed when it is entirely unavoidable or when it impacts on features which had already been changed in the past and therefore had already been compromised to some extent.
8. Since the Sabi Bridge site of Steinaecker's Horse has unexcavated sections and is very close to the development, the developer needs to ensure that it is not impacted. Currently it seems it will not be impacted directly, but negotiations with the concessionaire is still in process. Bearing this in mind, a buffer zone of at least 20 m should be implemented. In order to do this the exact perimeters of the site should be determined.
9. Should it be impossible to avoid the site (even partially) an assessment should be made of what exactly are in danger of being impacted. This section of the site, if not excavated before, should then be excavated in order to document these remains. A final report on the excavations, if implemented, should be submitted to SAHRA.
10. It would be reasonable to include information about all three heritage features and its history in a display at the development. It is an area with a rich history which should be utilised to the benefit of visitors and the public in general. The plan indeed is to have a media facility on the Skukuza side to facilitate interpretative and media exposure. This mitigation within the project will enhance heritage and as such conserve heritage assets that may otherwise deteriorate, as well as expose the history to the public that otherwise may have been overlooked.
11. Resultantly, the developer will have to implement a 'Watching brief' with a heritage expert doing regular inspections of the work during the implementation phase and working together with the team to ensure the above mentioned. The scope for this brief should include the bridge, historical rolling stock and the

Sabi Bridge site of Steinaecker's Horse ensuring that the cultural and heritage integrity thereof is not compromised.

12. A final report of interventions, including a CMP, should be delivered to SAHRA on completion of the project.
13. The former SANDF building on the northern side of the bridge is less than 60 years and may therefore be demolished without any further heritage approval. Of course, it may also be utilised as part of the mentioned media facility.
14. It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Due to the density of vegetation it also is possible that some sites may only become known later on. Operating controls and monitoring should therefore be aimed at the possible unearthing of such features. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.

In This regards the following 'Chance find Procedure' should be followed:

- *Upon finding any archaeological or historical material all work at the affected area must cease.*
- *The area should be demarcated in order to prevent any further work there until an investigation has been completed.*
- *An archaeologist should be contacted immediately to provide advice on the matter.*
- *Should it be a minor issue, the archaeologist will decide on future action, which could include adapting the HIA or not. Depending on the nature of the find, it may include a site visit.*
- *SAHRA's APM Unit may also be notified.*
- *If needed, the necessary permit will be applied for with SAHRA. This will be done in conjunction with the appointed archaeologist.*
- *The removal of such archaeological material will be done by the archaeologist in lieu of the approval given by SAHRA, including any conditions stipulated by the latter.*
- *Work on site will only continue after removal of the archaeological/ historical material was done.*

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APPENDIX A

DEFINITION OF TERMS:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B

DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

- Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.
- Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.
- Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period
- Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
- Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.
- Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

APPENDIX C

SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Negligible – The site has no heritage significance, although it may be older than 60 years.
- Low - A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings. A site with minimal importance which is decreased by its bad state of decay.
- Low-Medium - A site of lesser importance, which is increased by a good state of preservation and contextual importance (e.g. a specific community).
- Medium - Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also, any important object found out of context.
- Medium-High - A site that has high importance due to its age or uniqueness, but which decreases due to its bad state of decay.
- High - Any site, structure or feature regarded as important because of its age or uniqueness. Also, any important object found within a specific context.
- Very High - A site of exceptional importance due to its age, uniqueness and good state of preservation.

Heritage significance:

- Grade I Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III Other heritage resources of local importance and therefore worthy of conservation

Field ratings:

National Grade I significance: The site should be managed as part of the national estate, should be nominated as Grad I site, should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score above 50.

Provincial Grade II significance: The site should be managed as part of the provincial estate, should be nominated as Grade II site, should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score between 40 and 50.

Local Grade IIIA: The site should be included in the heritage register and not be mitigated (high significance), should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score between 37 and 40.

Local Grade IIIB: The site should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority. Score between 6 and 36.

Local Grade IIIC: The description in the phase 1 heritage report is seen as sufficient recording (low significance) and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorisation. Score below 5.

APPENDIX D

PROTECTION OF HERITAGE RESOURCES:

Formal protection:

National heritage sites and Provincial heritage sites – grade I and II

Protected areas - an area surrounding a heritage site

Provisional protection – for a maximum period of two years

Heritage registers – listing grades II and III

Heritage areas – areas with more than one heritage site included

Heritage objects – e.g. archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

General protection:

Objects protected by the laws of foreign states

Structures – older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

APPENDIX E

HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or scoping phase – establishment of the scope of the project and terms of reference.
2. Baseline assessment – establishment of a broad framework of the potential heritage of an area.
3. Phase I impact assessment – identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – if there is no likelihood that any sites will be impacted.
5. Phase II mitigation or rescue – planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III management plan – for rare cases where sites are so important that development cannot be allowed.

APPENDIX F

EXAMPLES OF CONCEPTUAL DESIGN



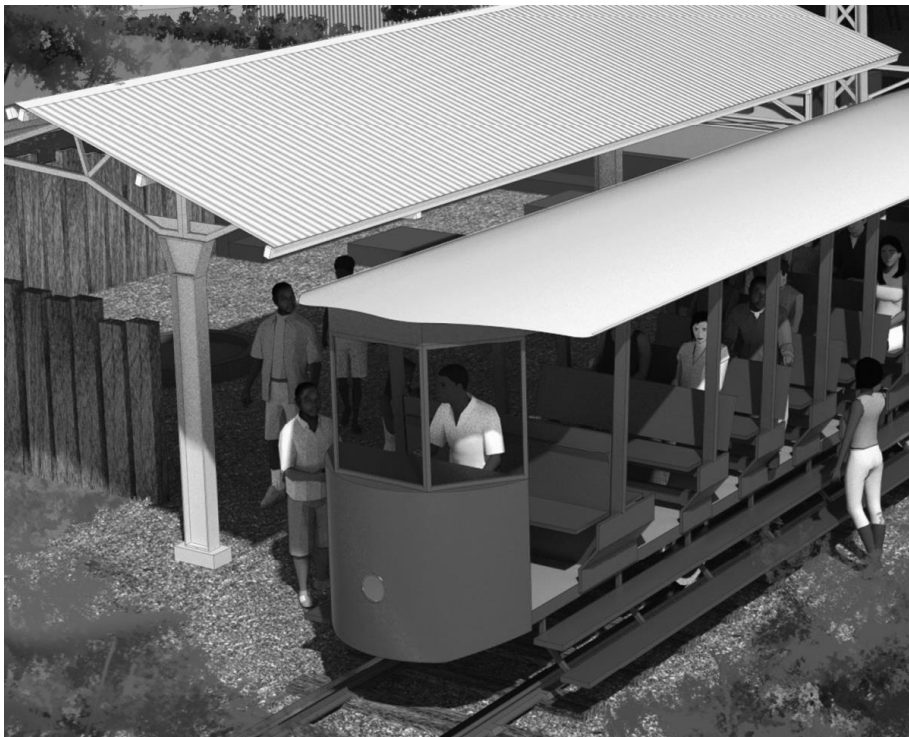
RAILWAY CARRIAGES ON BRIDGE



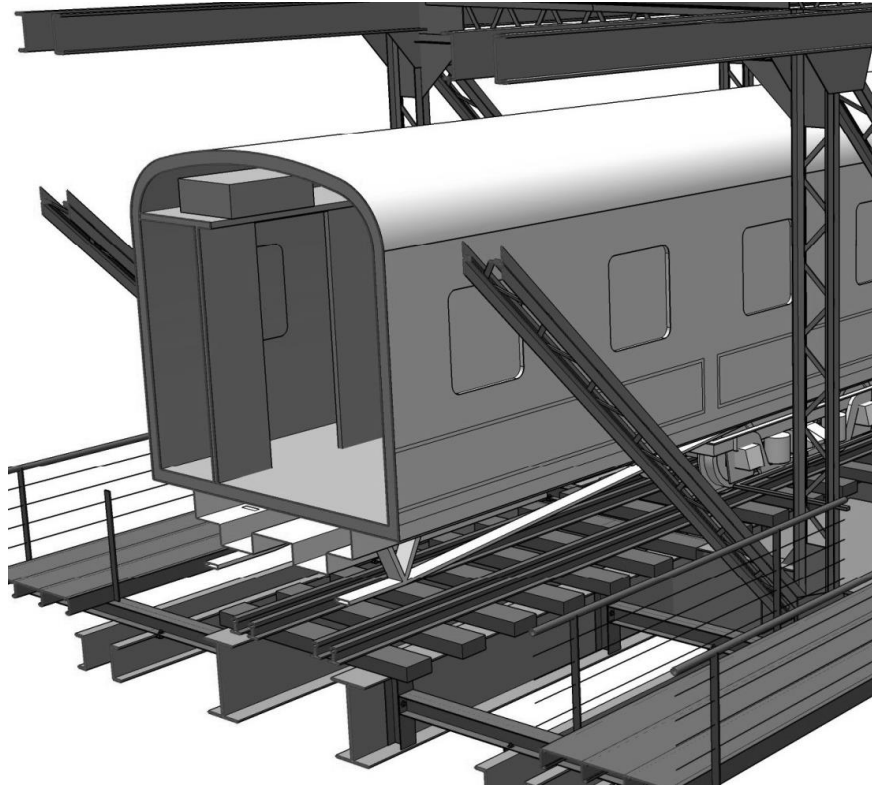
THE OPTIMAL MODEL AND CONFIGURATION PROPOSED BY KRUGER SELATI (PTY) LTD.



HISTORICAL TRAIN AT STATION WITH TRAM LOADING DOCK. NOTE HOWEVER, THAT A TRAM WILL NOT BE UTILISED (THIS WAS PART OF AN EARLIER DESIGN). THE PUMP TROLLEY CURRENTLY AT THE STATION (FIGURE 20) WILL BE USED.



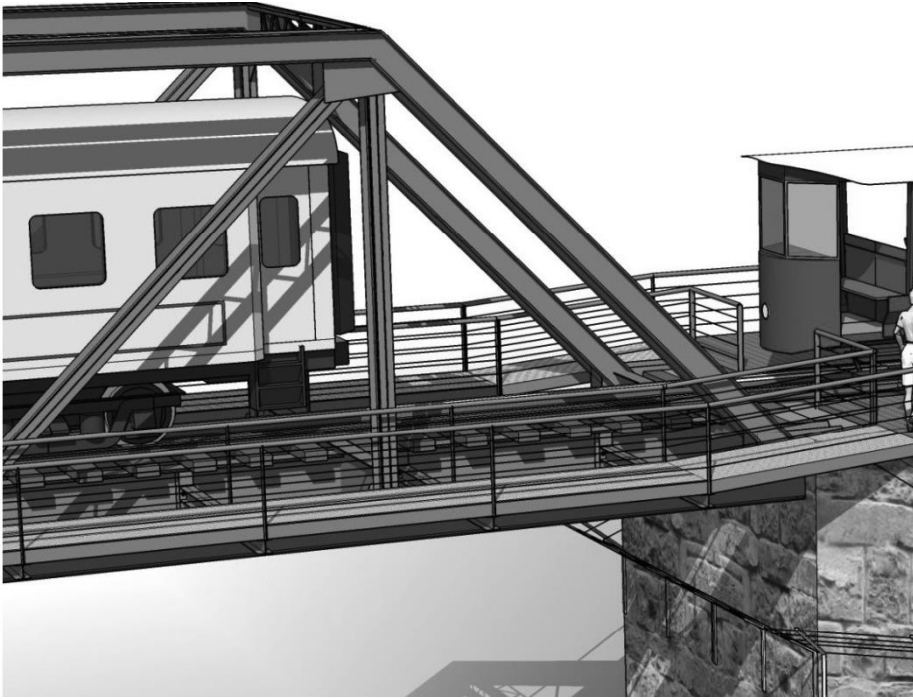
TRAM TAKING VISITORS TO BRIDGE



WALKWAY ALONG BRIDGE. THIS IS A 'CLIP-ON' AND FULLY REVERSABLE.



WALKWAY AND RAILWAY CARRIAGES ON THE BRIDGE



LOADING POINT AT BRIDGE