

**SKA BUILT HERITAGE SPECIALIST STUDY**

Revision C – 10 July 2018



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## **1. EXECUTIVE SUMMARY**

This report identifies 8 built heritage structures within the SKA core area. These include previously identified and graded sites as well as previously unknown heritage resources. After assessment, the report recommends the retention of the identified heritage resources along with proposed mitigation measures. The remaining structures located within the SKA core area are deemed to have low cultural and historic significance. The demolition of these structures is possible. Mitigation measures are proposed to ensure that the demolition of these structures has a limited negative impact on the areas cultural landscape and sense of place.

## 2. ABBREVIATIONS, DEFINITIONS AND ACRONYMS

- **Alter** Any action affecting the structure, appearance or physical properties of the building including painting, plastering etc. (section 2 (1) NHRA)
- **Brakdak** A flat, clay topped roof built on a timber sub structure
- **Conservation** The protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance (section 2(iii) NHRA)
- **Corbelled** A method of construction using brick or stone where each course of stone or brickwork steps or projects slightly from the course below
- **Cultural Significance** Aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value of significance (section 2(vi) NHRA)
- **Development** Any physical intervention, or action (other than natural causes) which may in the opinion of a heritage authority result in a change to the nature, appearance or physical nature of a place as defined in the NHRA.
- **Heritage Resource** A place, object or structure of cultural significance (section 2(xvi) NHRA)
- **HIA** Heritage Impact Assessment as outlined in section 38 of the NHRA
- **IAP** Interested and affected parties
- **Living Heritage** Intangible aspects of inherited culture including cultural tradition, oral history, ritual, popular memory etc. (NHRA).
- **Management** In relation to heritage resources includes conservation, presentation and improvement of a heritage resource (NHRA).
- **National Monument** A site protected in terms of the National Monuments Act. The National Monuments Act was replaced by the NHRA. All National Monuments are now Provincial Heritage Sites.

- **SKA** Square Kilometre Array
- **Structure** Any building, works, device or other facility made by people which is fixed to the land. This included all fixtures, fittings and equipment associated therewith (NHRA).
- **NHRA** National Heritage Resources Act
- **Vernacular Architecture** Buildings that are not designed by an architect and not reliant on imported materials. Materials are used from the local context informed by traditional building practices. They are a product of their environment
- **VASA** Vernacular Architecture Society of South Africa
- **Werf** – The collective space and buildings around a farm house

### **3. Introduction**

This report is a specialist report that forms part of the larger HIA report being compiled by Digby Wells Environmental for the proposed SKA project. The purpose of this report is to identify and assess the impact and make recommendations for the built heritage resources located in the core area of the SKA project.

The built heritage resources located within the project site vary in type and scale from farmsteads to retaining walls. They also vary in age from the early 19<sup>th</sup> century to the early 20<sup>th</sup> century. While not in close proximity to each other they are concentrated on the southern portion of the SKA core area.

While rich in heritage resource dating from the pre historic to the pre-colonial, the built heritage resources of the SKA core are often it's most visible. They form part of the visible cultural and historic landscape of the Karoo, adding to its unique identity and sense of place.

These resources are documented and assessed in detail in this report with the intention of finding appropriate measures to protect and enhance their cultural significance within the scope and intention of the broader SKA project.

### 3.1 APPROACH & METHODOLOGY

The approach and methodology for the research undertaken in this report is broken down into various phases. Each of these phases informs the following phase, allowing for greater focus as the research progressed. The steps in this approach are detailed below:

#### DESKTOP RESEARCH

Before undertaking any site inspections high level remote research was undertaken. This research has been consolidated in this report and informed the fieldwork and site inspections undertaken. The research included:

- SAHRIS database of heritage sites within the SKA Core area
- HIA reports prepared for previous phases of the SKA / MeerKAT radio telescope project (see references)
- The VASA journal (see references)
- Various books and journal publications on Karoo vernacular architecture and history (see references)
- Selected academic dissertations (see references)
- Property valuations conducted of the farms within the SKA Core area

#### FIELDWORK

Following from the desktop research the following fieldwork was undertaken:

- A high level preliminary site inspection and evaluation of the affected areas of the whole SKA project area was undertaken by Justin du Piesanie and Jaco van der Walt was undertaken from 26 February to 02 March 2018. From this buildings and structures outside the core area which are at risk of being affected by the proposed work were identified for further investigation.
- A more thorough site inspection was conducted by Yasmin Mayat and Brendan Hart between 26 March and 29 March 2018. The inspection included:
  - All declared heritage buildings and structures within the Core area identified on the SAHRIS database.
  - All heritage buildings and structures within the Core area identified in previous studies.
  - All heritage buildings and structures at risk of being affected by the proposed work identified in the within the Core area and spiral arms identified in the preliminary fieldwork.

## OUTCOMES

The outcomes of the research which forms part of the recommendations of this report are:

- The assessment of the cultural significance of the identified heritage resources.
- The identification of Risk and Opportunities relating to the identified heritage resources.
- The compilation of conservation guidelines and mitigation measures (both general and specific) as a means of maintaining and protecting the relevant cultural significance.

### 3.2 ASSUMPTIONS & LIMITATIONS

The following assumptions and limitations in the preliminary research, fieldwork and site investigations need to be noted:

- Existing Databases & Reports
  - The assumption is made that, as far as possible, the information available on existing databases and reports is accurate and correct.
  - The completeness and extents of existing databases and reports is unknown. Attempts have been made to mitigate against this through the use of multiple sources as well as through fieldwork.
  - The subjectivity of existing sources. Attempts have been made to mitigate against this through the use of multiple sources as well as through fieldwork.
- Environmental Conditions
  - Existing environmental conditions create limits with relation to the conducting of on site fieldwork. These include:
    - The large distances between heritage resources
    - Issues with accessibility (locked gates, impassable roads, locked buildings)
    - The time available for onsite work
    - Limitations in terms of communications
- Valuation Reports
  - The valuation reports of the farms in the SKA core area have been used as a tool to direct fieldwork. An assumption has been made with respect to their completeness and accuracy.
  - The limitation of the assessors of the properties needs to be taken into account with respect to the identification of heritage resources.
  - The risks noted above have been mitigated as far as possible through cross referencing with other resources and databases.
- The heritage resources inspected in person were limited to the SKA core area with limited investigations by the built environment specialists outside of the core area.



#### 4. HISTORICAL BACKGROUND INFORMATION

Corbelled buildings in the Karoo are buildings made of stone with dome shaped roofs. The technique of 'corbelling' refers to the roof which was constructed by the laying of each successive row of flat stones slightly inwards. The gradually domed roof is then closed off by a flat stone. Corbelled buildings have been constructed over centuries in the Mediterranean, Middle East and the British Isles. In South Africa corbelled buildings can be differentiated into groups, the buildings of the Ghoja people found in the Free State, Gauteng and Mpumalanga; and the buildings of the early trekboers in the Carnarvon/Loxton/Fraserburg area of the Karoo. (Kramer 2007:5)



*Figure 1: Schuinshoogte Corbelled House (Walton 1961)*

James Walton, an early South African pioneer researcher on vernacular architecture, was asked by the National Monuments Council in 1960 to examine some corbelled structures in the Karoo. Subsequently a number of them were declared National Monuments. In 2008, the Vernacular Architecture Society of South Africa (VASSA) started a project to locate more of them. Patricia Kramer, an archaeological researcher on corbelled buildings, came to the realisation on this study that “this collection of buildings was an invaluable source of information about life in the Karoo in the 19<sup>th</sup> century, which is undocumented” (2011).



**Figure 2:** Map showing the area where the majority of corbelled buildings are located (Kramer 2011:1)

Corbelled buildings were constructed primarily due to the lack of trees in the environment and an abundance of suitable stone. The environment has low, sporadic rainfall with poor soil which cannot support any substantial trees. The majority of buildings are found in the area of Williston in the west, Carnarvon in the east, and extending to Loxton and Fraserburg. A few corbelled structures are found outside of these parameters, notably the ones that were identified in this report. Kramer (2011) notes that due to the lack of wood, a house with a pitched roof or a 'brakdak' (a flat, clay topped roof), could not be constructed. Corbelled buildings were additionally warm in winter and cool in summer.



**Figure 3:** Pre colonial 'herd boy' hut (Frescura 2016:42)

The corbelled structures were built by the early stock farmers or trekboers which included whites from the Cape and Europe, as well as Basters (mixed race people) originally from the north of the Orange River. The land they occupied was inhabited by the San who were ultimately decimated in the area. Corbelled structures may also be influenced by Xhosa settlements in the area as well as Sotho and Tswana refugees, Mantatees, who crossed the Vaal. These groups all came from a stone building culture from pre-colonial times. (Kramer 2011)



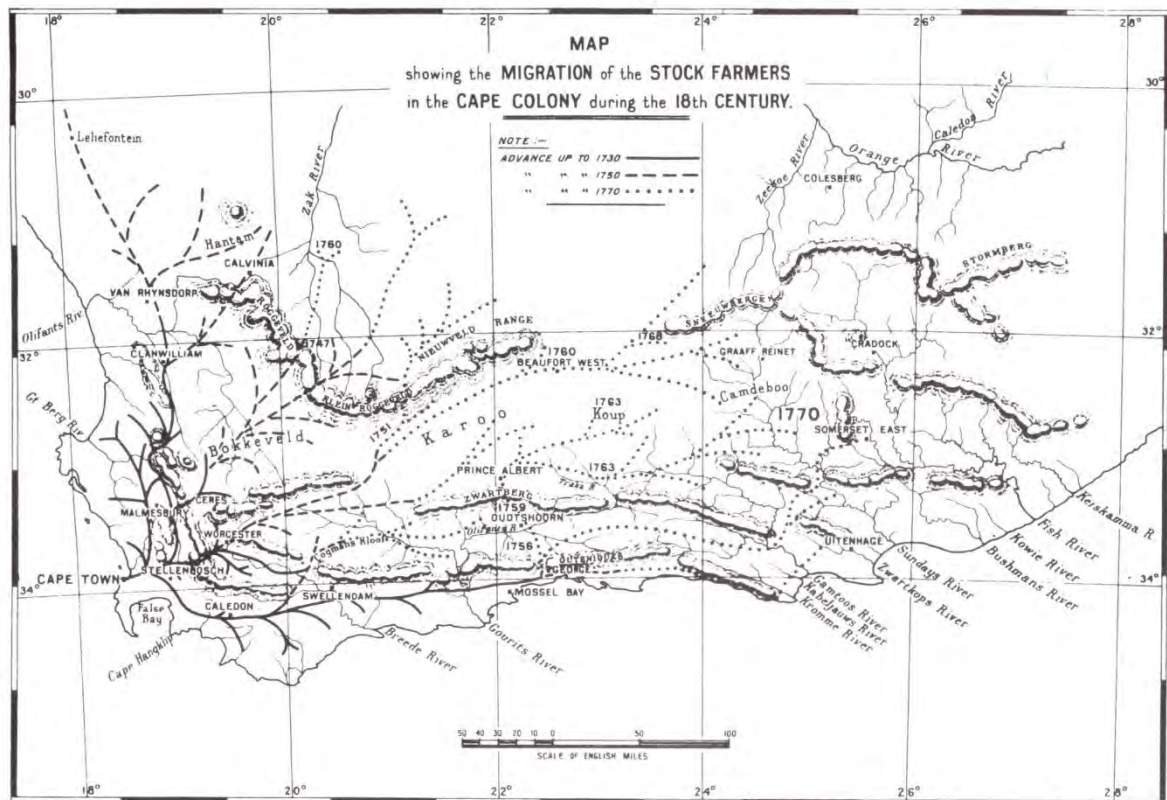
**Figure 3:** Examples of corbelled buildings from France (left) and Italy (right) (Kramer 2012:7)

Early researchers such as Walton assumed corbelled buildings were most likely built by southern European settlers. Walton (1989: 123) believed that a builder from a Mediterranean country most likely helped build one with the assistance of the Khoi, who learned the technique and consequently helped to build corbelled houses for the farmers. Kramer (2007:5) further notes that South African corbelled buildings are only one layer of stone thick unlike those found in the northern hemisphere.

While later research (Van der Waal-Braaksma and Ferreira, 1986) alludes to the theory that corbelled housing was an expected development from the rondavel with a reed roof. It is generally accepted however that these stone structures were influenced by the Sotho – Tswana people (Frescura 1981:23).

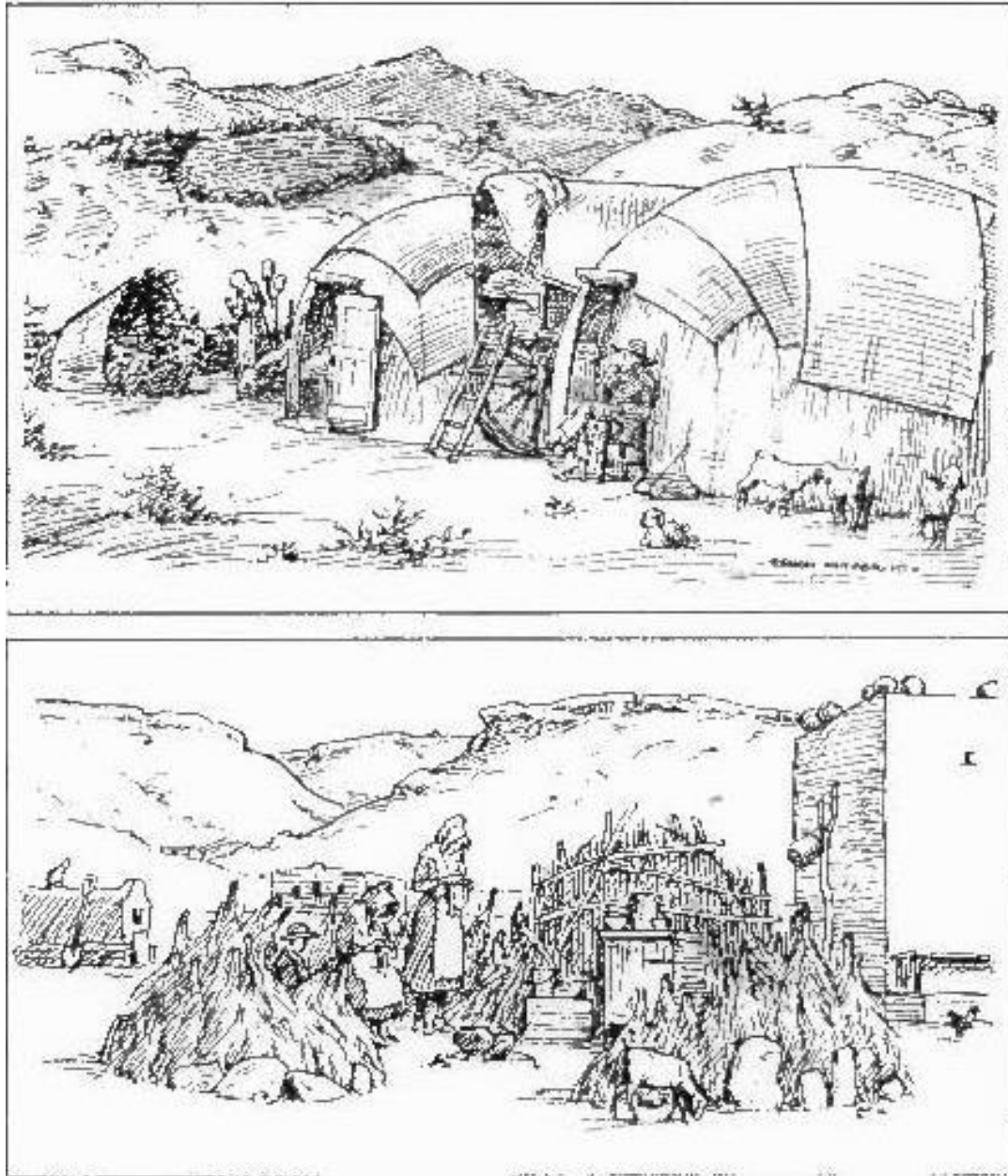
#### MIGRATION OF THE TREKBOERS INTO THE KAROO

At the beginning of the eighteenth century the wine and grain market was saturated resulting in many farmers turning to stock farming. However due to overgrazing, many farmers looked for pasturage further afield. Permits to graze on outposts beyond settlement areas were given and known as *leenings plaats* (loan places). The farmers had no right over the land but if a building was erected, it could be sold to the Government or a future tenant. (Walton 1989: 113)



C. Graham Botha

**Figure 4:** Map showing the of the migration stock farmers in the Cape Colony during the 18<sup>th</sup> Century (Walton 1986:115)



**Figure 5:** Sketches made by Erich Mayer in the 1920s showing the adoption of the indigenous *matjieshut* by trekboers (Kramer 2012:57)

Trekboers started moving into the area in the 1750s; wagons, tents and *matjehuisse* were all used initially as dwellings. (Kramer 2011:43)

The evolution of semi-permanent dwellings to corbelled buildings was the move away from transhumance farming to a more permanent farm with the recognition of legal permanency through the 1813 Cradock Proclamation. This proclamation gave farmers a greater sense of security over ownership of the land however surveying only got underway in the 1820s. Kramer (2011) therefore surmises that the first corbelled buildings date from around this time. Based on oral records, surveyor diagrams and material usage, the last corbelled buildings were constructed in the 1870s, a period of around 60 years.

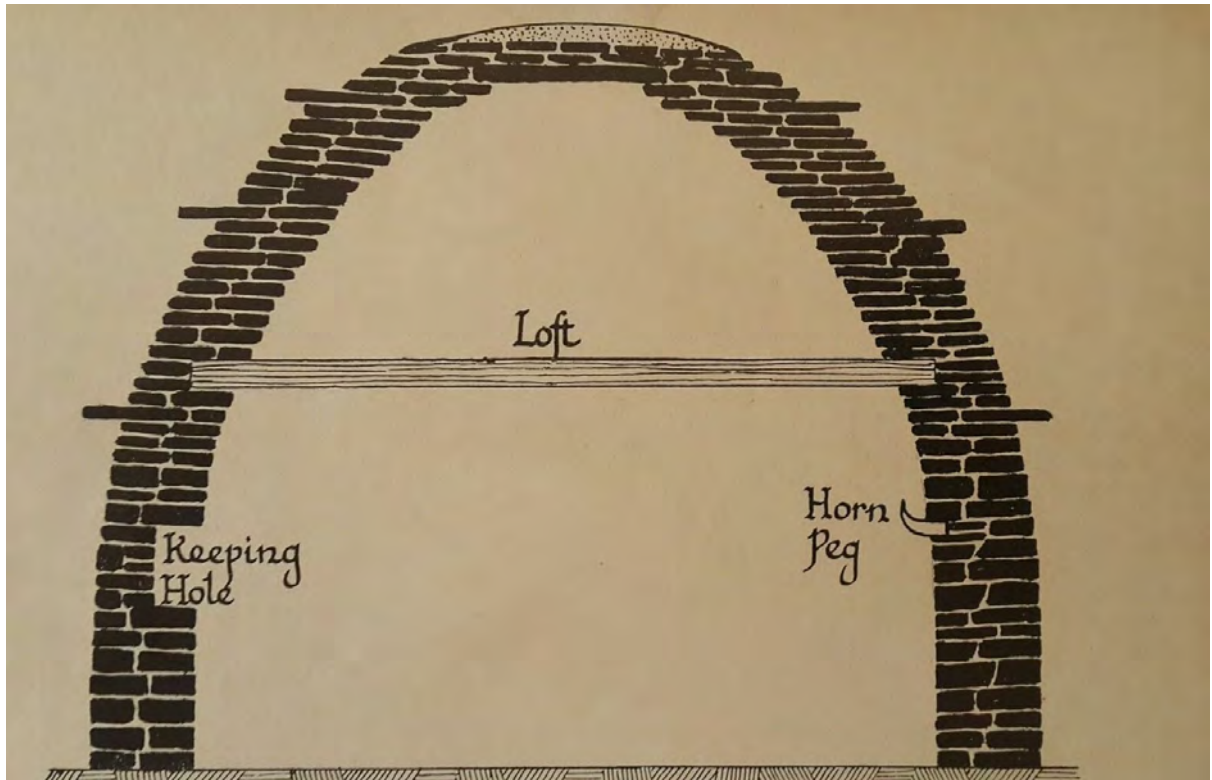
## CORBELLED BUILDING CONSTRUCTION AND VARIATIONS

There are significant variations in corbelled buildings in terms of style, size and function. Kramer (2011) observes that no two corbelled buildings are exactly the same, making them true forms of vernacular architecture. The huts are generally circular, with a few rectangular and square exceptions, in plan with an internal diameter within the range of 5 metres. The walls can reach up to 75 mm in thickness and can reach a height of about 2 – 5 metres and then curve inwards to an apex, giving it a beehive shape. The final opening is closed off by a large flat stone slab. (Walton 1961)



**Figure 6:** Gawie Fagan illustrating the speculated use of projecting stones as scaffolding for construction and roof repair (Fagan 2008:38)

The method of construction is known as corbelling, “whereby each course of stones projects slightly beyond the one below” (Walton 1961). The roofs often have projecting stones which most likely served as steps and anchors for scaffolding in the construction, as well as for repair work. Doors were generally stable doors which were brought from ox-wagon from Beaufort West. A window faced the entrance which may have been closed with shutters. Walton (1989: 124) elaborated that many farmers informed him that the windows were made small in case of an attack by San bowmen. The floor was a mixture of clay and cow dung and in some cases was rubbed smooth and often polished with a mixture of ox blood and fat. “Keeping – holes” were found in the walls and beams often stretched across the arcs for drying meat or hanging clothes. Animal horns were also used as pegs. In some cases a loft, accessed by a ladder, covered part of the floor and was used for sleeping.



**Figure 7:** Section across a corbelled building at Schuinshoogte (Walton 1961)

Early corbelled dwellings had internal fireplaces and cooking was done outside. Later examples have been found to have a raised hearth. A circular or rectangular hut was initially built when a farmer settled for his immediate requirements. More corbelled buildings were later added or a rectangular one used as an extension with a pitched roof. They were often linked with an internal doorway or simply had an outside door.

There is a direct relationship between the floor diameter and the height of the structure. Lower walls are often double stone walls with linking stones for support. Unlike European corbelled buildings, South African examples typically have clay mortar between the stones. The size of the doorway defines the function of the building. Half-door openings were used as chaff storage buildings and don't have windows. They may further have a *trapvloer* or threshing floor. Other buildings without windows were used as cold store rooms for meat, tallow, butter or candles, or as a general storeroom. Buildings with full-door openings have windows, wall niches and shelving were inhabited. Buildings were however altered over time with a change in function. Storerooms may have been converted to dwellings for farm workers or vice versa once a family had built another house. (Kramer 2011:230)

Kramer (2011: 95) notes that most interiors were plastered till roof height. This clay plaster was often painted over with a lime wash. It is however difficult to tell if corbelled buildings were plastered and painted on the outside. This is mostly due to the effect of weather or farmers who at some later stage plastered their buildings with new materials.



**Figure 8:** Vischgat homestead showing the evolution of architectural styles including circular corbelled hut, square corbelled hut and T plan pitch roof house with a *brak dak buite kamer* attached (VASA 2007:58)

At the end of the 19<sup>th</sup> century Walton (1989: 129) surmised that the sheep farmers reverted to a more conventional rectangular dwelling form. These often initially had flat *brakdaks* but corrugated iron became more widely used with their increased availability. It provided cover for larger living areas and required less maintenance. The change from corbelled buildings to rectangular flat-roofed dwellings, to corrugated iron pitched dwellings can still be seen at some farm homesteads where these forms can all be found with subsequent changes over time.

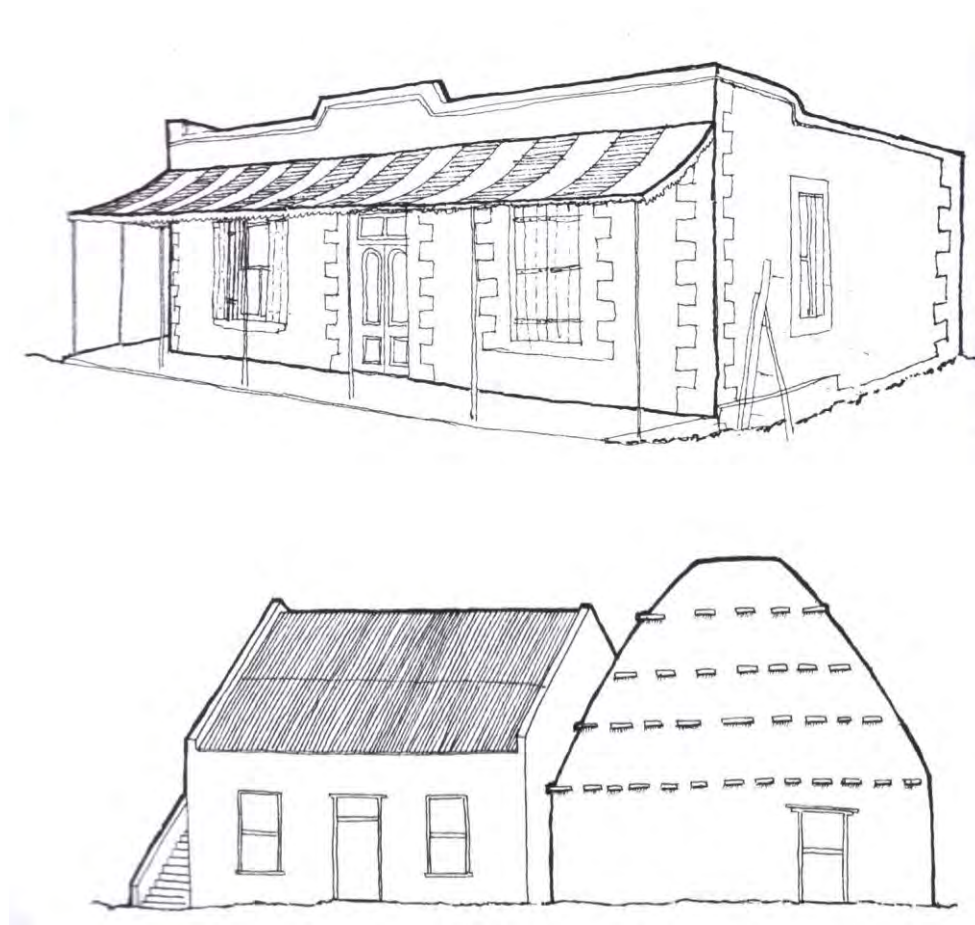


**Figure 9:** Stuurmansfontein homestead with two linked corbelled rooms with a later pitch roofed rectangular room and a flat roofed rectangular building (VASA 2007:55)



Walton's work led to the declaration of a number of corbelled buildings as National Monuments under the former National Monuments Act (now provincial heritage sites).

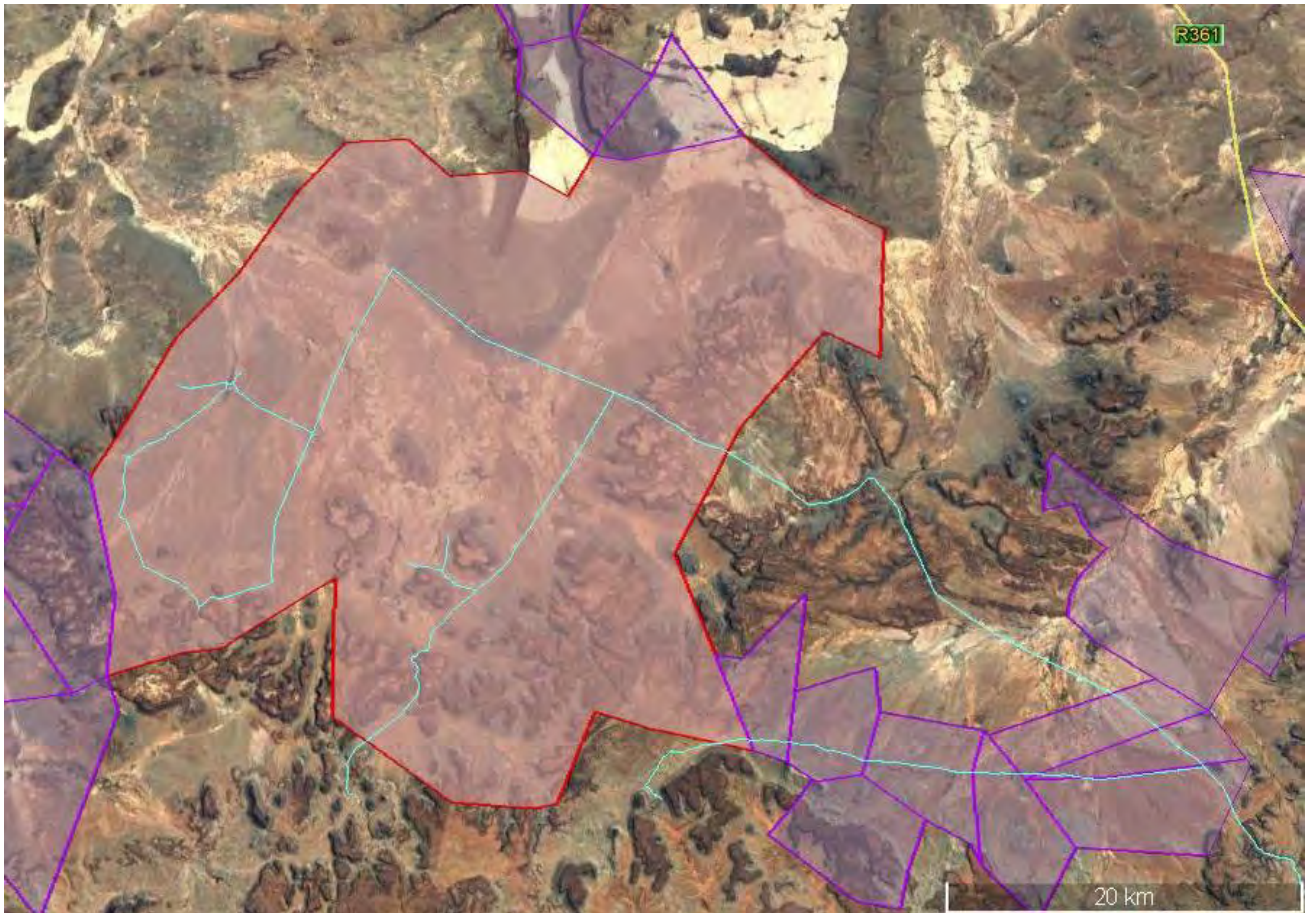
Corbelled buildings of the Karoo can be used as a means of gaining understanding of the "frontier" and the interaction and cultural contact of various people during this relatively undocumented period. History has been adapted and distorted and associated with the events such as Great Trek or specific battles. This history tends to ignore the indigenous people of the area and the encounters and interactions that they would have had with the early trekboers. Corbelled structures of Karoo are a vernacular architecture that reflects this situation.



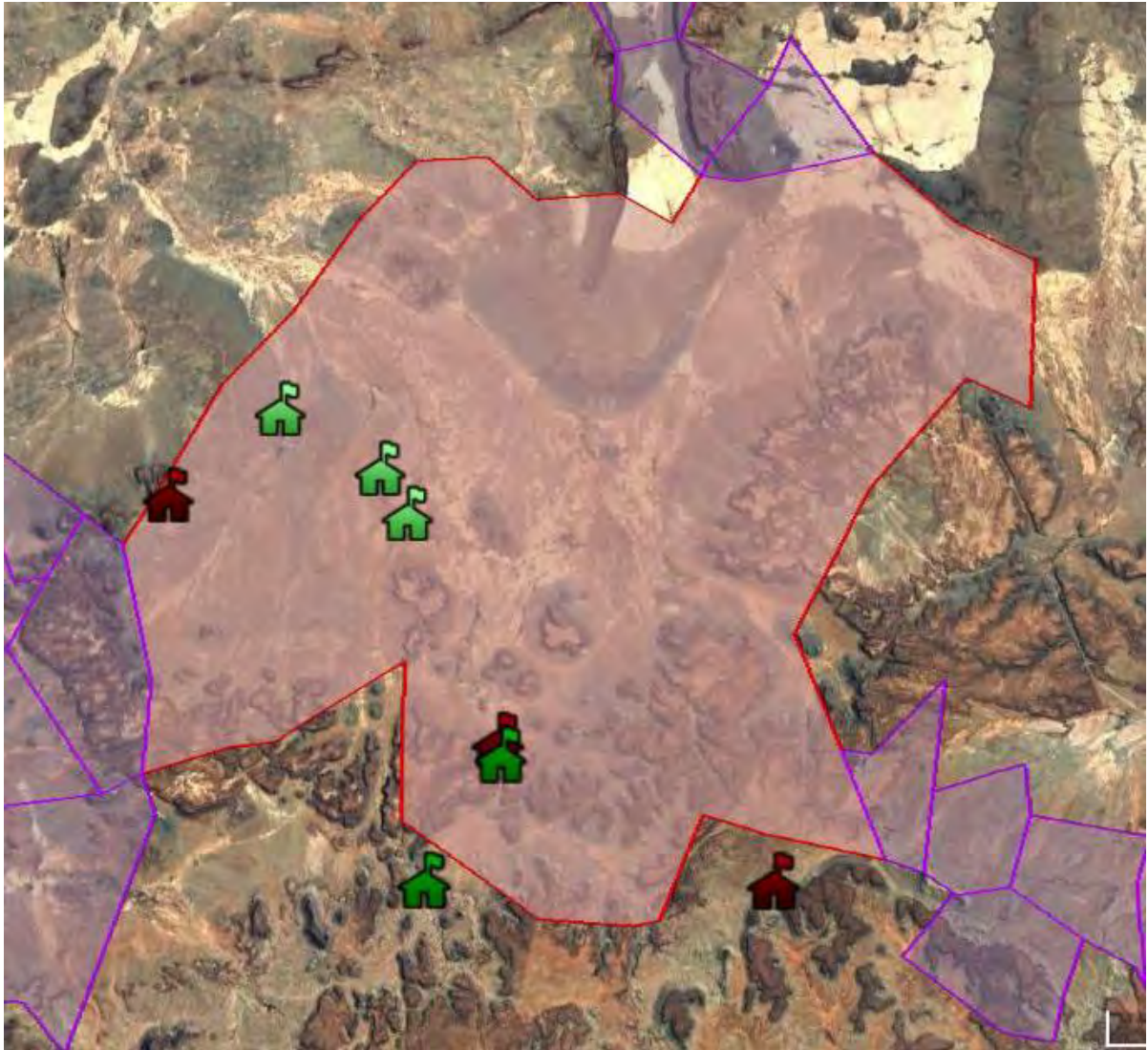
**Figure 10:** 1880's Karoo dwelling with concave corrugated sheeting roof (above) with earlier corbelled house with pitched roofed addition (Frescura 2016:42).

## 5. FIELDWORK

Fieldwork by the built environment specialists occurred between 26 March and 29 March 2018. The following structures were identified as having potential cultural significance and requiring onsite inspection and documentation:



**Figure 11:** GPS track of Fieldwork (in Blue)



**Figure 11:** Distribution of heritage buildings and structures identified.

Grade 2 sites marked in **RED**

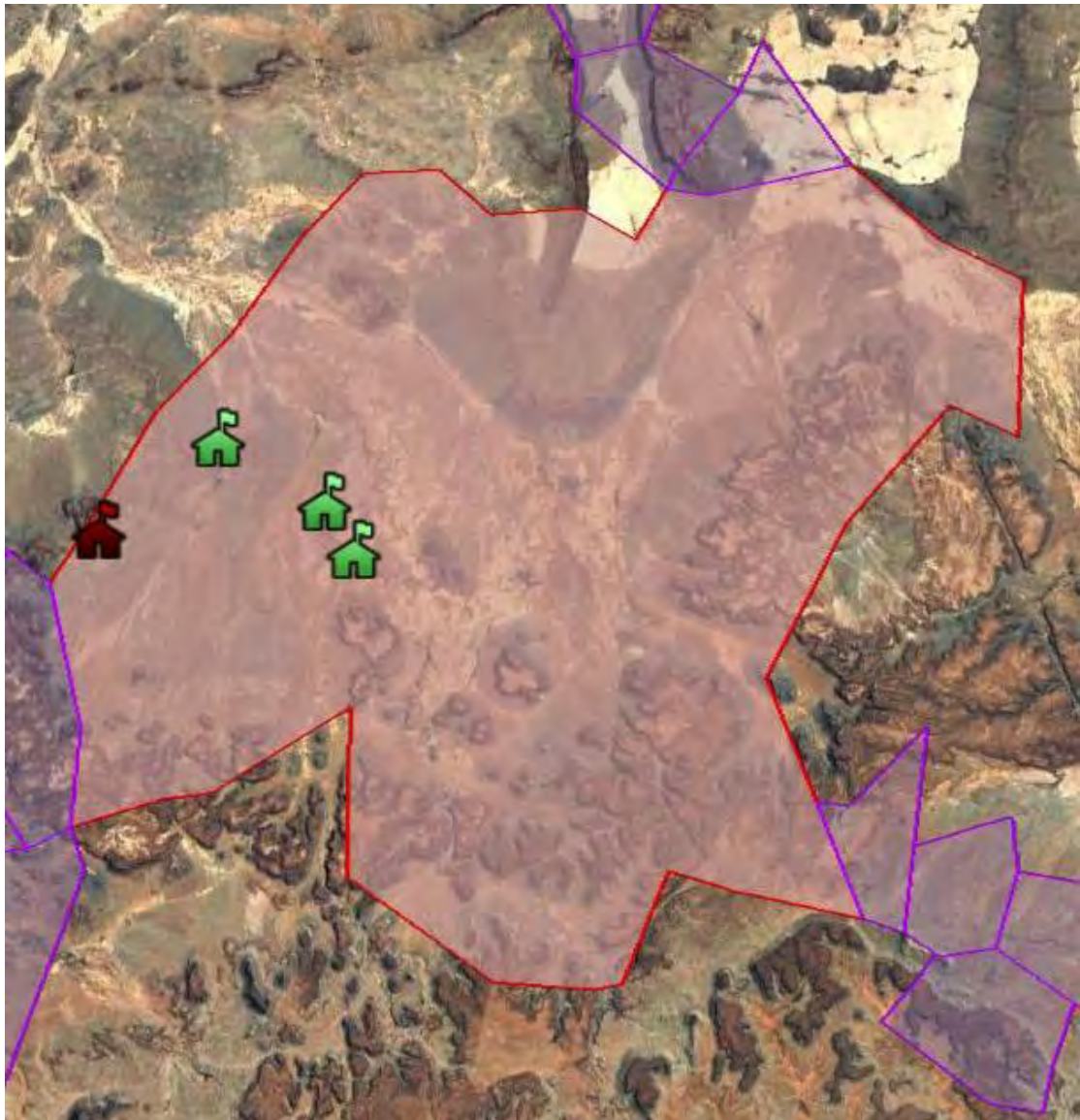
Grade 3 sites marked in **GREEN**

Note the concentration of heritage sites on the southern portion of the SKA core area.

## **6. STATEMENTS OF SIGNIFICANCE**

- The 8 structures / heritage sites on the following pages were identified as having cultural significance.
- Statements of significance as well as a Risk and Opportunities analysis for all of the identified structures are included below.
- The assessment and statement of significance is conducted as per the definition in section 3(3) of the NHRA.
- Additional images of the identified heritage resources are included in Appendix B of this report.

## 6.1 DECLARED HERITAGE RESOURCES



**Figure 12:** Distribution existing of declared and graded heritage buildings and structures

Grade 2 sites marked in **RED**

Grade 3 sites marked in **GREEN**

Reference	Built Heritage Site 1
SAHRIS ID	93470
Name	Farmstead (Corbelled House)
GPS Coordinates	-30.691160°; 21.204750



**Figure 13:** Corbelled house with subsequent additions

Resource ID	Type	Description	Aesthetic Field Rating	Historic Field Rating	Scientific Field Rating	Social Field Rating	INTEGRITY	VALUE	Designation	Recommended Field Rating	Recommended Field Rating2	Field Rating Description				
BHS 1	Site	Corbelled House	5	6	4	6	2	4	3	6	4	14	Medium High	6.00	<b>Grade II</b>	Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region

- The building is a good example of a corbelled house and the local vernacular architecture
- The building shows successive layers of additions and adaptations and is a historical record of the evolution of this type of building/architecture
- The building is in a poor state of repair with severe degradation of some of the later additions to the original corbelled building
- The building, despite its ages and lack of maintenance retains many original fittings and features
- The context of the building has largely been degraded with it now located in a service area of the farm
- The original corbelled building has a relationship with the two successive farmsteads located nearby. Collectively they demonstrate the evolution of farmstead architecture from its early settler origins to the late 20<sup>th</sup> century.
- The building is (anecdotally from the former farm owner) the most northern square based corbelled house.

RISKS	<ul style="list-style-type: none"> <li>• Existing SHARIS listing and grading do not identify the building as a corbelled house</li> <li>• The building is in a poor condition</li> <li>• Risk of squatting and vandalism if not actively used</li> <li>• Loss of historical context if adjacent buildings are demolished</li> <li>• Accessibility – a long way from main roads</li> </ul>
OPPORTUNITIES	<ul style="list-style-type: none"> <li>• Opportunity for educational purposes on early farmsteads, vernacular architecture</li> <li>• Research opportunities</li> <li>• Tourism, accommodation or reuse of in adjacent farm buildings</li> </ul>

Reference	Built Heritage Site 2
SAHRIS ID	93473
Name	Farmstead 'Ruins'
GPS Coordinates	-30.650545°; 21.265110°



Figure 14: Main façade with stoep

Resource ID	Type	Description	Aesthetic	Aesthetic Field Rating	Historic	Historic Field Rating	Scientific	Scientific Field Rating	Social	Social Field Rating	INTEGRITY	VALUE	Designation	Recommended Field Rating	Recommended Field Rating2	Field Rating Description
BHS 2	Site	Farmstead 'Ruins'	3	5	4	5	2	4	3	5	4	12	Medium	5.00	Grade III A	Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within a more localised context -very high significance rating



- The building is a good example of a second generation farmstead dating from the latter half of the 19<sup>th</sup> century
- The building, while having successive layers of additions, has a visual and aesthetic unity to its architectural language.
- The building is in a poor state of repair.
- Internally the building has few fittings or features of historical significance.
- Externally the building, despite its ages and lack of maintenance retains many original fittings and features
- The immediate farm werf and context of the building is largely intact and adds to the structures cultural significance.
- The relationship of the building with its associated farm buildings and kraals is of importance.

RISKS	<ul style="list-style-type: none"> <li>• The building is in a poor condition</li> <li>• Risk of squatting and vandalism if not actively used</li> <li>• Loss of historical context if adjacent buildings are demolished</li> <li>• Accessibility – a long way from main roads</li> </ul>
OPPORTUNITIES	<ul style="list-style-type: none"> <li>• Opportunity for educational purposes on early farmsteads</li> <li>• Research opportunities</li> </ul>

Reference	Built Heritage Site 3
SAHRIS ID	46497
Name	Farmstead Building
GPS Coordinates	-30.701430°; 21.335660°



**Figure 15:** Aerial view of building

Resource ID	Type	Description	Aesthetic	Aesthetic Field Rating	Historic	Historic Field Rating	Scientific	Scientific Field Rating	Social	Social Field Rating	INTEGRITY	VALUE	Designation	Recommended Field Rating	Recommended Field Rating <sup>2</sup>	Field Rating Description
BHS 3	Site	Farmstead Building	3	4	4	5	2	4	3	5	3	9	Low	5.00	Grade III A	Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within a more localised context -very high significance rating

- This building was not inspected due to difficulties with accessibility (locked gates, impassable roads).
- From aerial photographs it appears to be a former farmstead with a monopitched roof, possibly an early 'brakdak' which has been re roofed with corrugated sheeting.
- Similarly the building shows signs of layers of successive alterations and additions.

RISKS	<ul style="list-style-type: none"> <li>• Risk of squatting and vandalism if not actively used</li> <li>• Accessibility</li> <li>• Unable to make further assessment</li> </ul>
OPPORTUNITIES	<ul style="list-style-type: none"> <li>• Unable to make assessment</li> </ul>

Reference	Built Heritage Site 4
SAHRIS ID	93485
Name	Roosand House
GPS Coordinates	-30.679897°; 21.320515°



*Figure 16: Main façade with stoep.*

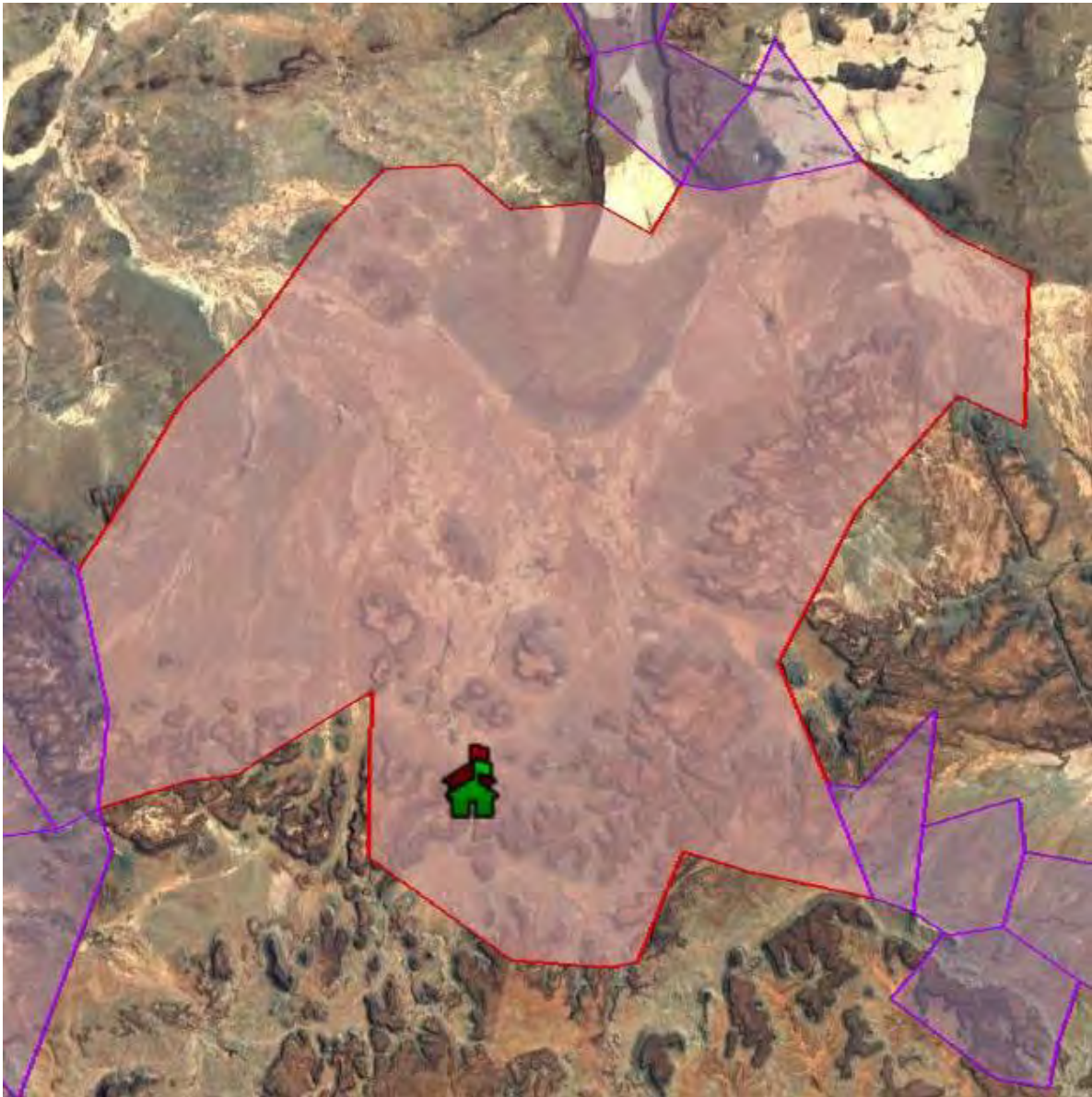
Resource ID	Type	Description	Aesthetic	Aesthetic Field Rating	Historic	Historic Field Rating	Scientific	Scientific Field Rating	Social	Social Field Rating	INTEGRITY	VALUE	Designation	Recommended Field Rating	Recommended Field Rating2	Field Rating Description
BHS 4	Site	Roosand Farmstead Building	2	3	2	4	2	4	3	4	2	5	Negligible	4.00	Grade III B	Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within a more localised context - high significance rating

- The building is an example of an early 20<sup>th</sup> century farm house.
- The building has been substantially altered and appears to have been functioning as a barn or store.
- Most of the buildings architectural character, detailing and fittings have been lost or removed. Only the columned patio remains.
- The building is in a poor state of repair.
- Internally the building has no fittings or features of historical significance.
- The immediate farm werf and context of the building is partially intact and adds limited value to the buildings cultural significance.

RISKS	<ul style="list-style-type: none"> <li>• The building is in a poor condition</li> <li>• Risk of squatting and vandalism if not actively used</li> <li>• Limited reuse opportunities due to poor condition</li> </ul>
OPPORTUNITIES	<ul style="list-style-type: none"> <li>• Opportunity for functional reuse</li> <li>• Part of the cultural landscape</li> <li>• Located on a main road</li> </ul>

## RECOGNISED HERITAGE RESOURCES

Resources that, while not being formally declared have clear heritage and cultural significance.



**Figure 13:** Distribution existing of recognised (but not declared and graded) heritage buildings and structures

Grade 2 sites marked in **RED**

Grade 3 sites marked in **GREEN**

Reference	Built Heritage Site 5
Name	Groot Paardekloof Farmstead and outbuildings
GPS Coordinates	-30.80813900°; 21.3836990°



**Figure 14:** Groot Paardekloof main farm house

Resource ID	Type	Description	Aesthetic	Historic	Scientific	Social	INTEGRITY	VALUE	Designation	Recommended Field Rating	Recommended Field Rating2	Field Rating Description
BHS 5	Site	Groot Paardekloof Farmstead	4	5	2	3	4	14	Medium High	6.00	<b>Grade II</b>	Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region

- The place Groote Paardekloof has been identified as being of cultural significance in the SKA Phase 1 Heritage Scoping Assessment (Cedar Tower Services) with a recommended Grade 2 listing having been mentioned in the Bleek & Lloyds manuscript.
- The building is a good example of a second generation farmstead dating from the latter half of the 19<sup>th</sup> century
- The building, while having successive layers of additions, has a visual and aesthetic unity to its architectural language.
- The building is in a fair to good state of repair. The associated farm buildings are in a fair state of repair.
- Internally the building appears to be largely original with many original fittings and finishes in existence.
- Externally the building, despite its ages and lack of maintenance retains many original fittings and features
- The immediate farm werf and context of the building is intact and adds to the structures cultural significance. This includes irrigation furrows, various farm buildings of different ages, kraals, farm workers cottages, terraced fields along the river.
- The relationship of the building with its associated farm buildings and kraals is of importance.
- The location of the building, along the main road and river in a picturesque valley adds to its significance

RISKS	<ul style="list-style-type: none"> <li>• Risk of squatting and vandalism if not actively used</li> <li>• Loss of historical context if adjacent buildings are demolished</li> </ul>
OPPORTUNITIES	<ul style="list-style-type: none"> <li>• The building is in a good condition</li> <li>• The building is readily accessible</li> <li>• Opportunity for educational purposes on early farmsteads</li> <li>• Research opportunities</li> <li>• Building can be easily adapted and reused</li> </ul>



Reference	Built Heritage Site 6
Name	Groot Paardekloof School House
GPS Coordinates	-30.813193°; 21.386437°



**Figure 15:** Groot Paardekloof “School House”

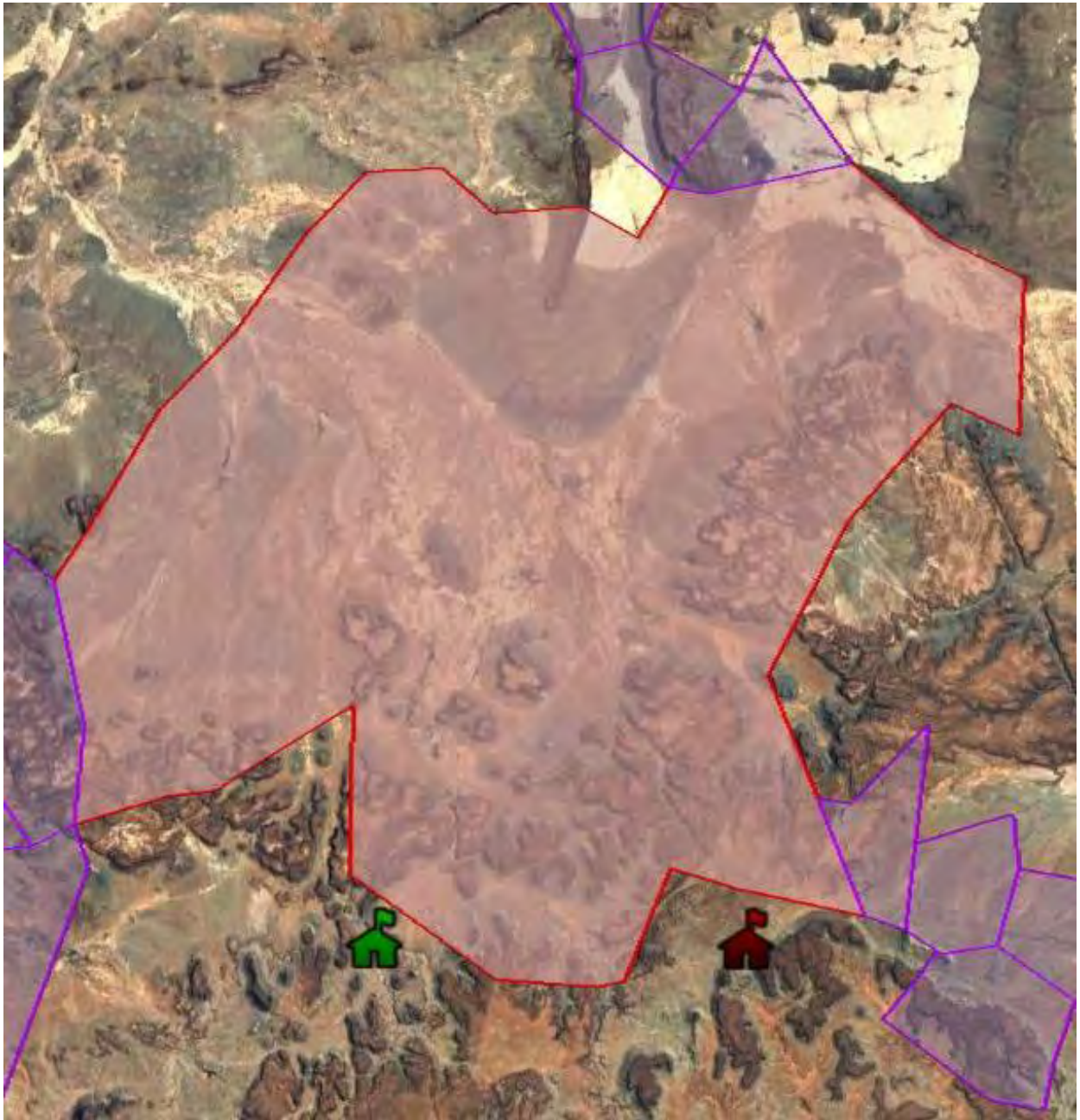
Resource ID	Type	Description	Aesthetic	Aesthetic Field Rating	Historic	Historic Field Rating	Scientific	Scientific Field Rating	Social	Social Field Rating	INTEGRITY	VALUE	Designation	Recommended Field Rating	Recommended Field Rating <sup>2</sup>	Field Rating Description
BHS 6	Site	Groot Paardekloof Farmstead School House	3	5	5	6	2	4	3	6	3	10	Low	5.00	Grade III A	Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within a more localised context -very high significance rating

- The place Groote Paardekloof has been identified as being of cultural significance in the SKA Phase 1 Heritage Scoping Assessment (Cedar Tower Services) with a recommended Grade 2 listing having been mentioned in the Bleek & Lloyds manuscript.
- The building is a good example of a second generation farmstead dating from the latter half of the 19<sup>th</sup> century
- The building currently has a monopitched corrugated iron roof. This possibly replaced an earlier 'brakdak' (vernacular earthen flat roof).
- The building, while in a poor state of repair, appears to have had limited alterations and additions and has a visual and aesthetic unity to its architectural language.
- Internally the building is in a poor condition with few original fittings and finishes in existence.
- Externally the building, despite its ages and lack of maintenance retains many original fittings and features
- The location of the building, along the main road and river in a picturesque valley adds to its significance with the building forming part of the cultural landscape along the road.

RISKS	<ul style="list-style-type: none"> <li>• The building is in a poor condition and is at risk of collapse if no action is taken to protect it</li> <li>• Squatting &amp; vandalism</li> </ul>
OPPORTUNITIES	<ul style="list-style-type: none"> <li>• The building is readily accessible</li> <li>• Opportunity for educational purposes on early farmsteads</li> <li>• Research opportunities</li> </ul>

## NEWLY IDENTIFIED HERITAGE RESOURCES

Heritage resources previously unidentified



**Figure 16:** Distribution existing of newly identified heritage buildings and structures

Grade 2 sites marked in **RED**

Grade 3 sites marked in **GREEN**

Reference	Built Heritage Site 7
Name	Corbelled House and Farmstead
GPS Coordinates	-30.87045900°; 21.52927400°



*Figure 17: Corbelled house with collapsed later addition*

Resource ID	Type	Description	Aesthetic	Aesthetic Field Rating	Historic	Historic Field Rating	Scientific	Scientific Field Rating	Social	Social Field Rating	INTEGRITY	VALUE	Designation	Recommended Field Rating	Recommended Field Rating2	Field Rating Description
BHS 7	Site	Corbelled House	5	7	4	6	3	5	3	6	4	15	High	6.00	Grade II	Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region

- The building is a good example of a corbelled house and the local vernacular architecture. The stonework of the originally corbelled building is fully intact and skilfully constructed.
- The building shows successive layers of additions and adaptations and is a historical record of the evolution of this type of building/architecture
- The building is in a poor state of repair with severe degradation of some of the later additions to the original corbelled building
- The building, despite its ages and lack of maintenance retains some original fittings and features
- The context of the building appears to be largely intact. Its surrounding farm werf included a number of Kraals, ancillary structure, a sheep dip, farm dam etc.
- The site is littered with historic debris (ceramic shards, metal work, glass) suggesting that the site has remained relatively untouched since being abandoned.
- The location and setting of the building and werf is very picturesque and undisturbed (including the view of the valley from the building) with the building seeming to be an extension of its natural environment.

RISKS	<ul style="list-style-type: none"> <li>• The farm on which the building is located is not owned by the SKA</li> <li>• The site can be severely degraded by too many visitors</li> <li>• The building is completely undocumented</li> <li>• The building is in close proximity to proposed access road for a new dish in the spiral arm.</li> <li>• The building is not listed</li> <li>• The corbelled house is structurally sound. Many of the surrounding building are in a poor condition</li> <li>• Risk of squatting and vandalism (limited due to remote location)</li> <li>• Loss of historical context if adjacent buildings are demolished, new infrastructure is introduced</li> <li>• Accessibility – a long way from main roads</li> </ul>
OPPORTUNITIES	<ul style="list-style-type: none"> <li>• Opportunity for educational purposes on early farmsteads, vernacular architecture</li> <li>• Research opportunities due to its undisturbed nature and the intact state of the werf</li> <li>• Accessibility – a long way from main roads (limits visitors)</li> </ul>

Reference	Built Heritage Site 8
Name	Retaining Walls
GPS Coordinates	-30.869151°; 21.346092°



**Figure 18:** Retaining walls along bas of cliff

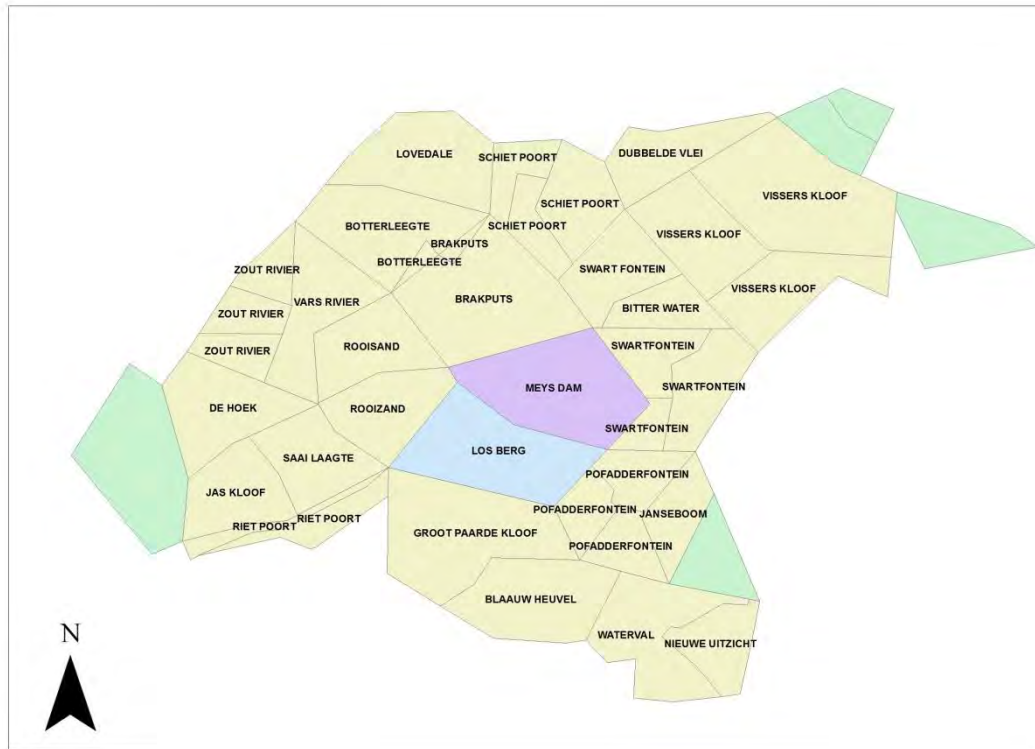
Resource ID	Type	Description	Aesthetic	Aesthetic Field Rating	Historic	Historic Field Rating	Scientific	Scientific Field Rating	Social	Social Field Rating	INTEGRITY	VALUE	Designation	Recommended Field Rating	Recommended Field Rating2	Field Rating Description
BHS 8	Site	Retaining Walls	3	3	3	4	3	4	4	5	4	13	Medium High	4.00	Grade III B	Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within a more localised context - high significance rating

- The structure is an unusual example of a dry stacked stonework integrated into a living rock wall
- The wall is very finely built and a landmark within its context
- It is an example of the engineering solutions and construction abilities of early farmers
- The setting of the wall is very picturesque
- The wall appears to be in a good condition


RISKS	<ul style="list-style-type: none"> <li>• Collapse due to natural decay / plant growth or flooding</li> </ul>
OPPORTUNITIES	<ul style="list-style-type: none"> <li>• Adds to the sense of identity of the cultural landscape</li> </ul>

## 6.4 REMAINING BUILT ENVIRONMENT RESOURCES



The assessment of all of the remaining undeclared heritage resources is included below:










**Figure 19:** Key Plan of farms in core area




FARM: Dubbelde Vlei						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Staff Housing		Plastered brick structure, corrugated iron roof, steel window frames, concrete floors with stoep at front.	Average	less than 60 years	None	Can be demolished








Shed		Plastered brick structure, IBR roof, concrete floor, steel sliding door. Shed with lean to store area.	Average	less than 60 years	None	Can be demolished
Dwelling		Plastered brick structure, hipped corrugated iron roof, steel windows, concrete & timber floors, plasterboard ceilings.	Fair	older than 60 years	None	Can be demolished


FARM: Visserskloof						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Staff Housing		Plastered brick structure, corrugated iron roof, steel window frames, concrete floors.	Average	less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure, IBR roof, steel window frames, concrete floors.	Average	less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure, monopitch asbestos roof, steel window frames, concrete floors.	Fair	less than 60 years	None	Can be demolished
Stable		Plastered brick structure, monopitch asbestos roof, concrete floors.	Good	less than 60 years	None	Can be demolished


Main Dwelling, adjoining shed and Outbuildings		Plastered brick structure, double and mono pitched corrugated iron roofs, concrete and timber floors (tiled and carpeted), plasterboard ceilings	Good	possibly less than 60 years	None	Can be demolished
Rondavel		Plastered brick structure, thatch roof, steel window frames, concrete floor with slate finish.	Good	less than 60 years	None	Can be demolished
Power Room		Plastered brick structure, monopitched corrugated iron roof, steel window frames, concrete floor	Average	less than 60 years	None	Can be demolished



FARM: Visserskloof						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, corrugated iron roof, oregon pine ceilings, steel window frames, concrete and timber floors	Average	older than 60 years	None	Can be demolished
Store		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor	Average	less than 60 years	None	Can be demolished
Shed		Plastered brick structure, double pitched corrugated iron roof, steel window frames and sliding door, concrete floor, adjacent open shed	Average	less than 60 years	None	Can be demolished

Staff Housing		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor		less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor	Average	less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor	Average	less than 60 years	None	Can be demolished



FARM: Visserskloof						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, hipped double pitched corrugated iron roof, plasterboard ceilings, steel window frames, timber and concrete floors.	Good	less than 60 years	None	Can be demolished
Outbuildings		Plastered brick structure, hipped double pitched corrugated iron roof, plaster board ceilings, steel window frames, and concrete floors.	Good	less than 60 years	None	Can be demolished






FARM: Schietpoort						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Shed and staff accommodation		Plastered brick structure with steel window frames, corrugated iron roof and concrete floors	Average	possibly older than 60 years	None	Can be demolished



FARM: Schietpoort						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Shed		Plastered brick building, corrugated iron double pitched roof, concrete floors	Fair	less than 60 years	None	Can be demolished





FARM: Schietpoort						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, corrugated iron roof, steel window frames, plasterboard ceilings, concrete floors	Fair	less than 60 years	None	Can be demolished
Shed		Plastered brick structure under corrugated iron roof.	Average	less than 60 years	None	Can be demolished




FARM: Swartfontein						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, double pitched clay tile roof, steel window frames, timber and plasterboard ceilings, carpeted concrete floors.	Good	less than 60 years	None	Can be demolished
Shed		Plastered brick structure with steel portal frame, double pitched corrugated iron roof, concrete floor. Adjacent shearing area with monopitched corrugated iron roof and dirt floor.	Average	less than 60 years	None	Can be demolished
Cold Room		Plastered brick structure with monopitched corrugated iron roof, concrete floor	Good	less than 60 years	None	Can be demolished
Fodder/Mill Store		Plastered brick structure with monopitched corrugated iron roof, concrete floor	Good	less than 60 years	None	Can be demolished
Outbuilding		Plastered brick structure, double pitched tile roof, steel window frames and concrete floors.	Good	less than 60 years	None	Can be demolished
Goat Shelter		Plastered brick structure, mono pitched corrugated iron roof, concrete floors.	Good	less than 60 years	None	Can be demolished
Rondawel		Plastered brick structure, thatch roof, steel window frames, concrete floors with vinyl tiles.	Good	less than 60 years	None	Can be demolished


Store		Plastered brick structure, mono pitched corrugated iron roof, concrete floor.	Fair	less than 60 years	None	Can be demolished
Staff Houses		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floor.	Fair	less than 60 years	None	Can be demolished

FARM: Boter Leegte & Brakputs						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, hipped corrugated iron roof, steel window frames, plaster board and timber ceilings, timber floors.	Fair	older than 60 years	None	Can be demolished
Outbuildings		Plastered brick structure, hipped corrugated iron roof, plaster board ceilings, timber floor.	Average	possibly older than 60 years	None	Can be demolished
Rondawel Stores		Plastered brick structure, pitched corrugated iron roof, steel window frames and concrete floor.	Fair	less than 60 years	None	Can be demolished
Shed		Plastered brick structure, double and mono pitched corrugated iron roof, steel window frames, concrete floors.	Average	possibly older than 60 years	None	Can be demolished
Staff Houses		Plastered brick structures, mono pitched corrugated iron roof, concrete floors.	Poor	less than 60 years	None	Can be demolished

Store		Plastered brick structure, mono pitched corrugated iron roof, concrete floor.	Fair	less than 60 years	None	Can be demolished
Old Stables / Kraal Complex		Stone structure, no roof.	Poor	older than 60 years	None	Can be demolished








FARM (Owner): Marius Oberholzer Trust						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Face brick structure, double and mono pitched IBR roof, steel window frames, concrete floors with carpet and tile finishes, plaster board ceilings.	Good	less than 60 years	None	Can be demolished
Shed		Steel framed structure with brick infill, saw tooth corrugated iron roof, steel window frames, concrete floor, steel sliding doors.	Good	less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure, mono pitched corrugated iron roof, steel window frames and concrete floor.	Average	less than 60 years	None	Can be demolished
Staff Housing		Corrugated iron structure under mono pitched corrugated iron roof and steel window frames.	Fair	less than 60 years	None	Can be demolished



FARM: Lovedale ("Rooidam")						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Main Dwelling		Plastered brick structure, hipped corrugated iron roof, steel window frames, plaster board ceilings, timber floors.	Average	older than 60 years	None	Can be demolished
Old Dwelling		Plastered brick structure, hipped corrugated iron roof, wooden and steel window frames, plaster board ceilings and timber floors.	Poor	older than 60 years	None	Can be demolished
Shed		Plastered brick structure, double and mono pitched corrugated iron roof, steel window frames and concrete floors.	Fair	older than 60 years	None	Can be demolished





FARM: Bitter Water						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Shed		Plastered brick structure, mono pitched corrugated iron roof, concrete floors.	Fair	less than 60 years	None	Can be demolished










**FARM (Owner):** Christo Oberholzer Trust


Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, double and mono pitched corrugated iron roof, steel window frames, plaster board ceilings, carpeted concrete floors.	Fair	less than 60 years	None	Can be demolished
Old "Donkey"		Plastered brick structure under mono pitched corrugated iron roof, plaster board ceiling, steel window frames, concrete floor.	Fair	less than 60 years	None	Can be demolished
Stable		Plastered brick structure, mono pitched corrugated iron roof, steel window frames and concrete floor.	Fair	less than 60 years	None	Can be demolished
Staff House		Plastered brick structure, mono pitched corrugated iron roof, steel window frames and concrete floor.	Fair	less than 60 years	None	Can be demolished
Staff House		Plastered brick structure, double pitched corrugated iron roof, steel window frames and concrete floor.	Fair	less than 60 years	None	Can be demolished
Staff House		Plastered brick structure, mono pitched corrugated iron roof, steel window frames and concrete floor.	Fair	less than 60 years	None	Can be demolished
Old Stables		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor.	Poor	less than 60 years	None	Can be demolished






Engine Room		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor.	Fair	less than 60 years	None	Can be demolished
Shed		Plastered brick structure, double pitched corrugated iron roof and concrete floor.	Fair	less than 60 years	None	Can be demolished



FARM: Visserskloof						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, double and mono pitched corrugated iron roof, steel window frames, plaster board ceilings, timber floors.	Good	possibly older than 60 years	None	Can be demolished
Poison Store		Face brick structure, double pitched corrugated iron roof, concrete floor.	Good	less than 60 years	None	Can be demolished
Shed		Plastered brick structure, double and mono pitched corrugated iron roof, steel window frames, concrete and dirt floors.	Average	less than 60 years	None	Can be demolished
Stables		Plastered brick structure, mono pitched corrugated iron roof and concrete floor. May be an adaptation of an older dwelling.	Fair	older than 60 years	None	Can be demolished



Staff House		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished
Staff House		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished
Staff House		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished
Power Room		Plastered brick structure, mono pitched corrugated iron roof, concrete floor.	Good	less than 60 years	None	Can be demolished
Outbuilding		Plastered brick structure, double and mono pitched IBR roof, steel window frames and concrete floors.	Good	less than 60 years	None	Can be demolished


FARM (owner): DR Oberholzer						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Shed		Corrugated iron and timber pole structure, mono-pitched corrugated iron roof and concrete floor.	Average	less than 60 years	None	Can be demolished
Store & Housing		Plastered brick structure, mono-pitched corrugated iron roof, steel window frames, concrete floors.	Poor	less than 60 years	None	Can be demolished


Garage		Plastered brick structure, mono-pitched corrugated iron roof, plaster board and spaanseriet ceilings, steel and timber window frames and concrete floor.	Poor	less than 60 years	None	Can be demolished
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FARM: Janseboom						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, hipped corrugated iron roof, steel window frames, plaster board ceilings, concrete floors with carpet and ceramic tiled floors.	Good	possibly older than 60 years	None	Can be demolished
Coldroom		Brick structure, concrete roof, concrete floor.	Average	less than 60 years	None	Can be demolished
Shed		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished
Store		Plastered brick structure, mono pitched corrugated iron roof, concrete floor.	Fair	less than 60 years	None	Can be demolished
Power Room		Plastered brick structure, pitched iron roof, concrete floor.	Average	less than 60 years	None	Can be demolished

Rondawel		Plastered brick structure, thatch/concrete roof, concrete floor.	Fair	less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure under mono pitched corrugated iron roof, steel window frames, concrete floor.	Fair	less than 60 years	None	Can be demolished






FARM:		Janseboom				
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling / Store		Plastered brick structure, double pitched corrugated iron roof, steel window frames, plaster board ceilings, concrete floors.	Poor	possibly older than 60 years	None	Can be demolished
Staff housing		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor.	Poor	possibly older than 60 years	None	Can be demolished

FARM:		Janseboom				
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, double pitched corrugated iron roof, timber and plaster board ceilings, steel window frames and concrete floors.	Fair	possibly older than 60 years	None	Can be demolished






Garage & Store		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor.	Fair	possibly older than 60 years	None	Can be demolished
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FARM: Pofadderfontein						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Main Dwelling		Plastered brick structure, hipped corrugated iron roof, steel window frames, timber floors, plaster board ceilings.	Fair	older than 60 years	None	Can be demolished
Cool Room		Brick structure, mono pitched corrugated iron roof, concrete floor.	Fair	less than 60 years	None	Can be demolished
Shed		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floors.	Fair	possibly older than 60 years	None	Can be demolished
Staff Accomodation		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floors.	Poor	possibly older than 60 years	None	Can be demolished



FARM: Pofadderfontein						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, hipped corrugated iron roof, plaster board ceilings, steel window frames, timber and concrete floors.	Fair	older than 60 years	None	Can be demolished
Fodder Canopy		Pitched corrugated iron roof on wooden poles and dirty floor. It is in a fair to poor condition	Fair	less than 60 years	None	Can be demolished
Cold Room		Plastered brick structure, concrete/corrugated iron roof.	Fair	less than 60 years	None	Can be demolished
Power Room		Plastered brick structure, mono pitched corrugated iron roof, concrete floor.	Fair	less than 60 years	None	Can be demolished
Shed		Plastered brick structure, double pitched corrugated iron roof, concrete floor.	Fair	less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure, pitched corrugated iron roof, steel window frames, concrete floors.	Fair	less than 60 years	None	Can be demolished


FARM: Swartfontein						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, hipped corrugated iron roof, steel window frames, plaster board ceilings, carpeted concrete floors.	Average	possibly older than 60 years	None	Can be demolished
Outbuilding		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished
Second Outbuilding		Plastered brick structure, double pitched IBR roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished
Shed		Plastered brick structure, double and mono pitched corrugated iron roof, steel window frames, concrete floors.	Average	possibly older than 60 years	None	Can be demolished
Fodder Canopy		Steel structure under pitched IBR roof and dirt floor. It is in an average condition	Average	less than 60 years	None	Can be demolished
Staff House		Plastered brick structure, mono pitched corrugated iron roof, concrete floor.	Average	possibly older than 60 years	None	Can be demolished
Staff House		Plastered brick structure, mono pitched corrugated iron roof, concrete floor.	Average	possibly older than 60 years	None	Can be demolished











FARM: De Hoek						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Main Dwelling		Plastered brick structure, pitched asbestos roof, steel window frames, concrete and timber floors with carpet and tile finishes, plaster board ceilings.	Average	less than 60 years	None	Retain - part of historic farm werf
Store & Engine Room		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floors, plaster board ceiling.	Average	less than 60 years	None	Retain - part of historic farm werf
Shed & Lean to		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floor, steel sliding door.	Average	less than 60 years	None	Retain - part of historic farm werf
Implement Shed		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floor, steel sliding doors.	Average	less than 60 years	None	Retain - part of historic farm werf
Old Dwelling		Plastered brick structure, hipped corrugated iron roof, steel window frames, concrete and timber floors, plaster board ceilings.	Fair	older than 60 years	None	Retain - part of historic farm werf
Outbuildings (of old dwelling)		Plastered brick structure under pitched corrugated iron roof, steel window frames, concrete floor. Accommodation comprises of 2 x storerooms and an engine room. It is in a fair condition	Fair	older than 60 years	None	Retain - part of historic farm werf




Kordeelhuis		Stone structure, wooden window frames. Poor condition. <b>GRADED HERITAGE SITE - REFER TO <u>BHS1</u></b>	Poor	older than 60 years	Grade II	Retain - heritage resource
Mill Room		Plastered brick structure.	Poor	older than 60 years	None	Retain - part of historic farm werf
Staff Housing		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Retain - part of historic farm werf
Staff Housing		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Retain - part of historic farm werf
Staff Housing		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Retain - part of historic farm werf




FARM: Zout Rivier						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, double pitched corrugated iron roof, timber ceilings, timber window frames, timber and concrete floors. <b>DECLARED HERITAGE SITE - REFER to <u>BHS 2</u></b>	Bad	older than 60 years	Grade IIIA	Can Be Demolished – Special detailed documentation and recording
Stock Canopy		Stone and plastered brick structure.	Fair	older than 60 years	None	Can Be Demolished – Special detailed documentation and recording



Staff Housing		Plastered brick structure, mono pitched corrugated iron roof, concrete floor.	Poor	older than 60 years	None	Can Be Demolished – Special detailed documentation and recording
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FARM: Vars Rivier						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Main Dwelling		Plastered brick structure, hipped corrugated iron roof, steel window frames, timber floors, plaster board ceilings.	Fair	older than 60 years	None	Can be demolished
Store		Plastered brick structure, mono pitched corrugated iron roof and concrete floor.	Fair	possibly older than 60 years	None	Can be demolished
Outbuilding		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floors, partially asbestos structure.	Fair	possibly older than 60 years	None	Can be demolished
Shed		Plastered brick structure, mono and double pitched corrugated iron roof, steel window frames and concrete floors.	Fair	possibly less than 60 years	None	Can be demolished
Staff House		Plastered brick structure, double pitched corrugated iron roof, steel window frames and concrete floors.	Poor	less than 60 years	None	Can be demolished
Staff House		Plastered brick structure, mono pitched corrugated iron roof, steel window frames and concrete floors.	Fair	possibly less than 60 years	None	Can be demolished


Fodder Store / Piggery		Cement block structure under, double pitched corrugated iron roof, concrete floor.	Fair	possibly older than 60 years	None	Can be demolished
2 x Fodder Stores / Piggeries		Cement block structure under, double pitched corrugated iron roof, concrete floor.	Fair	possibly older than 60 years	None	Can be demolished

FARM: Saai Laagte						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Prefabricated structure under pitched IBR roof, steel window frames, plaster board ceilings, ceramic tiled concrete floors.	Fair	less than 60 years	None	Can be demolished
Cold Room		Brick structure, mono pitched concrete roof.	Fair	less than 60 years	None	Can be demolished
Staff House		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, timber and concrete floors.	Fair	possibly less than 60 years	None	Can be demolished






FARM: Rooisand						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Old Dwelling		Old plastered brick structure, hipped corrugated iron roof, steel and timber window frames, no ceilings and timber (Yellowwood) floors. <b><u>DECLARED HERITAGE SITE - REFER TO BHS 4</u></b>	Poor	older than 60 years	Grade IIIC	Can Be Demolished – Special detailed documentation and recording
Staff House		Plastered brick structure under, double pitched corrugated iron roof.	Fair	older than 60 years	None	Can Be Demolished – Special detailed documentation and recording
Staff House & Toilet		Face brick structure, mono pitched corrugated iron roof, steel window frames, concrete floors.	Fair	less than 60 years	None	Can be demolished

FARM: Grootpaardekloof						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Dwelling		Plastered brick structure, double pitched corrugated iron roof, sash windows, timber floors and ceiling and steel & timber window frames. <b><u>DECLARED HERITAGE SITE - REFER TO BHS 5</u></b>	Average	older than 60 years	Grade II	Retain - heritage resource
Engine Room		Plastered brick structure, hipped corrugated iron roof, concrete floors, plaster board ceilings.	Average	less than 60 years	None	Retain - part of historic farm werf

Old Shed & School		Stone & plastered brick structure, double pitched corrugated iron roof, concrete floors.	Fair	older than 60 years	Grade II	Retain - heritage resource
Shearing Shed		Steel framed and corrugated iron structure, steel window frames, concrete floor, domed and mono-pitched corrugated iron roof.	Average	less than 60 years	None	Relocate
Stables & Storerooms		Plastered brick structure under a pitched corrugated iron roof, concrete floors.	Average	older than 60 years	Grade II	Retain - heritage resource
Old Dwelling		Plastered brick structure under a pitched corrugated iron roof, concrete floors	Poor	possibly older than 60 years	None	Retain - part of historic farm werf
2 x Staff Houses		Plastered brick structure under mono-pitched corrugated iron roofs, concrete floor.	Poor	older than 60 years	None	Retain - part of historic farm werf
Old School House		Plastered brick and stone structure, corrugated iron mono pitch roof, timber floors, timber window frames <b><u>DECLARED HERITAGE SITE - REFER TO BHS 6</u></b>	Bad	older than 60 years	Grade IIIA	Retain - heritage resource




FARM: Rietpoort						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Main Dwelling		Plaster brick structure, corrugated iron double pitched roof, steel window frames.	Good	less than 60 years	None	Can be demolished




Shed		Plaster brick structure, corrugated iron double pitched roof, steel window frames.	Average	less than 60 years	None	Can be demolished
Butchery		Plaster brick structure, corrugated iron hipped roof, steel window frames.	Average	less than 60 years	None	Can be demolished
Fuel Room		Plaster brick structure, corrugated iron mono pitched roof, steel window frames.	Good	less than 60 years	None	Can be demolished
Meat Room		Plaster brick structure, corrugated iron mono pitched roof, steel window frames.	Good	less than 60 years	None	Can be demolished
Engine Room			Good	less than 60 years	None	Can be demolished
Stables		Plaster brick structure, corrugated iron mono pitched roof, steel window frames.	Good	less than 60 years	None	Can be demolished
Fodder Store		Plaster brick structure, corrugated iron mono pitched roof, steel window frames.	Average	less than 60 years	None	Can be demolished
3 x Staff Housing		Plaster brick structure, corrugated iron mono pitched roof, steel window frames.	Good	less than 60 years	None	Can be demolished

FARM: Jaskloof & Saailaagte						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Main Dwelling		Plastered brick structure under, double pitched corrugated iron roof, steel and timber window frames, concrete floors with carpet and tile finishes, plaster board ceilings.	Good	less than 60 years	None	Can be demolished
Cool Room		Brick structure, mono pitched concrete roof and concrete floor.	Good	less than 60 years	None	Can be demolished
Power Building		Brick structure, double pitched corrugated iron roof, steel window frames and concrete floors.	Average	less than 60 years	None	Can be demolished
Outbuilding		Brick structure, double pitched corrugated iron roof, steel window frames and concrete floors.	Good	less than 60 years	None	Can be demolished
Kordeel Store 1		Stone structure under partially mono pitched corrugated iron roof. <b>POSSIBLE HERITAGE VALUE</b>	Fair	older than 60 years	None	Can Be Demolished – Special detailed documentation and recording



Kordeel Store 2		Stone structure, mono pitched corrugated iron roof. <b>POSSIBLE HERITAGE VALUE</b>	Fair	possibly older than 60 years	None	Can Be Demolished – Special detailed documentation and recording
Store		Plastered brick structure, mono pitched asbestos roof, Concrete floor, steel sliding door.	Good	less than 60 years	None	Can be demolished
Shed		Plastered brick structure, double and mono pitched corrugated iron roof, steel window frames, concrete floors.	Good	less than 60 years	None	Can be demolished
Biltong Room		Brick structure, mono pitched IBR roof, steel window frames, concrete floors.	Average	less than 60 years	None	Can be demolished
Dwelling		Prefabricated structure, IBR roof, steel window frames, concrete floors with carpet finishes, plasterboard ceilings.	Average	less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished

Staff Housing		Plastered brick structure, mono pitched corrugated iron roof, steel window frames, clay floor.	Fair	less than 60 years	None	Can be demolished
Shed		Plastered brick structure, double pitched corrugated iron roof, concrete floor, steel sliding door.	Poor	possibly older than 60 years	None	Can be demolished
Fodder Canopy		Steel, corrugated iron cladding and concrete structure, double pitched corrugated iron roof.	Average	less than 60 years	None	Can be demolished

FARM: Blaauwheuwel						
Building	Identifying Image	Description	Condition	Estimated Age	Grade	Recommendation
Main Dwelling		Plastered brick structure, double and mono-pitched slate roof, steel window frames, plaster board ceilings and ceramic tile floors finishes.	Average	possibly less than 60 years	None	Can be demolished
Cooling Room		Brick walls, concrete floor and roof.	Average	less than 60 years	None	Can be demolished
Laundry		Cement block structure, mono-pitched corrugated iron roof.	Average	less than 60 years	None	Can be demolished

Engine Room		Plastered brick structure, double pitched corrugated iron roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished
Shed & Storerooms		Steel portal frame with plastered brick infill walls, mono-pitched and dome corrugated iron roof, concrete floor.	Average	less than 60 years	None	Relocate
Shed		Face brick structure, with part IBR cladding, double pitched IBR roof, steel window frames and concrete floor.	Average	less than 60 years	None	Can be demolished
Pens		Brick structure, mono-pitched IBR roof and canopy.	Average	less than 60 years	None	Can be demolished
Poultry & Bird Cages		Various Structure	Average	less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure, double pitched IBR roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished
Staff Housing		Plastered brick structure, mono-pitched IBR roof, steel window frames, concrete floor.	Average	less than 60 years	None	Can be demolished

## 7 ASSESSMENT OF IMPACT

The impact of the proposed development of the current phase of the SKA, with all of its associated infrastructure, is assessed below. The assessment is made up of two parts, direct impact on identified built heritage resources as well as general indirect impact.

Recommendations on the proposed reuse or demolition of buildings and structures not identified as heritage resources are included in the report.

### DIRECT IMPACT – GENERAL

The general impacts listed below have the potential to impact on all built heritage:

- Few of the identified heritage resources are expected to be directly impacted by the proposed new development. Where there is a direct risk (Built Heritage Resource 7) this has been noted below.
- Heritage resources are finite and therefore intrinsically of value. The permanence of the proposed development, even when not directly having impact on the proposed resource, needs to be considered.
- While the risk needs to be assessed for the development as proposed additional risk exists during the construction period. This risk is difficult to define but could be the result of any of the following:
  - Damage caused by construction vehicles
  - Damage caused by the storing of construction materials
  - Damage caused by construction workers (even inadvertently) while using the buildings during construction
  - Environmental degradation of farm werf's during construction
  - Waste and rubble not removed after construction
- Buildings which are left unoccupied run the risk of being vandalised, illegally occupied and decay.
- Buildings and structures demolished in the core as part of the management of the land have the potential to have a negative impact on the historical record and character of the area. This is true for buildings which may have limited cultural significance in themselves but form part of the cultural landscape.
- Buildings and structures demolished in the core as part of the management of the land have the potential to have a negative impact on the architectural record of the area.
- Buildings or structures demolished have the potential to negatively impact on the sense of place and context. This is especially apparent in individual farm werf's which have individual buildings of high cultural significance adjacent to buildings of a lower cultural significance.
  - The national and international importance of the SKA project, its potential reach, impact and significance needs to be taken into account when looking at impacts and proposed mitigation measures.

## IMPACT ON IDENTIFIED HERITAGE RESOURCES

### Corbelled Buildings - BHS 1 & 7

IMPACT DESCRIPTION: Indirect impacts to corbelled house structures within the site-specific area resulting in damage or destruction (BHS 1 & 7)				
Predicted for project phase:	Pre-construction	Construction	Operation	Decommissioning
Dimension	Rating	Motivation		
<b>PRE-MITIGATION</b>				
Duration	Permanent (7)	Accidental damage or destruction through indirect impacts to the structure will be permanent	Consequence: Extremely detrimental (-20)	Significance: Minor - negative (-40)
Extent	National (6)	Corbelled buildings are finite, and associated with a particular point in the history of South Africa. Any impacts to these structures will affect the historical record of South Africa		
Intensity x type of impact	Extremely high - negative (-7)	Any unmitigated change to these resources will result in an extremely high negative impact		
Probability	Improbable (2)	Considering the known location of these resources, and the proposed Project, it is improbable that the identified impacts will manifest		

### Groot Paardekloof - BHS 5 & 6

IMPACT DESCRIPTION: Indirect impacts to the Groot Paardekloof Farmstead (BHS 5) and School (BHS 6) resulting in damage or destruction				
Predicted for project phase:	Pre-construction	Construction	Operation	Decommissioning
Dimension	Rating	Motivation		
<b>PRE-MITIGATION</b>				
Duration	Permanent (7)	Accidental damage or destruction through indirect impacts to the structure will be permanent	Consequence: Extremely detrimental (-19)	Significance: Minor - negative (-38)
Extent	National (6)	The identified negative impact will result in damage or destruction of tangible remains of a heritage place described in the Bleek and Lloyd manuscripts, associated with the /Xam		
Intensity x type of impact	Very high - negative (-6)	The identified impacts is considered high and will result in a moderate change to the resource.		
Probability	Improbable (2)	Considering the known location of these resources, and the proposed Project, it is improbable that the identified impacts will manifest		

### GRADE 3 Heritage Sites – BHS 2, 3, 4 & 8

IMPACT DESCRIPTION: Demolition of historic built environment resources with recommended grading of III A and B (BHS 2, 3, 4 & 8)				
Predicted for project phase:	Pre-construction	Construction	Operation	Decommissioning
Dimension	Rating	Motivation		
<b>PRE-MITIGATION</b>				
Duration	Permanent (7)	Demolition of structures will continue throughout and possibly beyond the project life.	Consequence: Highly detrimental (-15)	Significance: Moderate - negative (-105)
Extent	Municipal Area (4)	The CS of individual structures and werfs derive additional significance from their surrounding historical, physical and contemporary built environment. Their removal will affect the local environment and other built structures therein.		
Intensity x type of impact	Moderately high - negative (-4)	The demolition of these structures will result in a major change to historic built structures with a low to high CS rating.		
Probability	Certain (7)	It is certain that select structures within the SKA Core management area will be demolished.		

### BUILDINGS PROPOSED FOR DEMOLITION

IMPACT DESCRIPTION: Demolition of historic built environment resources older than 60 years				
Predicted for project phase:	Pre-construction	Construction	Operation	Decommissioning
Dimension	Rating	Motivation		
<b>PRE-MITIGATION</b>				
Duration	Beyond project life (6)	Demolition of structures will continue throughout and possibly beyond the project life.	Consequence: Moderately detrimental (-13)	Significance: Moderate - negative (-91)
Extent	Local (3)	The CS of individual structures and werfs derive additional significance from their surrounding historical, physical and contemporary built environment. Their removal will affect the local environment and other built structures therein.		
Intensity x type of impact	Moderately high - negative (-4)	The demolition of these structures will result in a major change to historic built structures with a low to high CS rating.		
Probability	Certain (7)	It is certain that select structures within the SKA Core management area will be demolished.		

## INDIRECT IMPACT

While the direct impact on culturally significant built fabric is more easily determined and quantified there exists the potential for negative indirect impact on the cultural significance of the built environment. This is detailed further below:

- Impact on the Cultural Landscape – Built infrastructure (including farm werf with trees and associated infrastructure) is the most visible part of the historically layered cultural landscape of the Karoo. While new additions (dishes) can have a negative impact on the landscape they can also be seen as a new layer. The loss of existing built resources (through the proposed demolition of unused or redundant built infrastructure) has a potentially irreversible negative impact on the cultural landscape and a loss of historical context.
- Built infrastructure (including farm werf with trees and associated infrastructure) contributes to the areas overall “sense of place.” The loss of this will have a negative impact on cultural significance.
- The proposed project will have an impact on the greater context. This included an impact on the built environments of adjacent towns. This falls outside of the scope of this report but needs to be considered. The potential economic growth that the project will create is generally positive but, if not properly managed can have a slow incremental negative impact on the cultural significance of the areas built heritage resources.

## 8 MITIGATION MEASURES

The proposed mitigation measures follow the conservation principles outline below:

- **PRINCIPLE 1**  
The identified heritage resources form part of a historically layered cultural landscape / context. While individually of cultural significance they derive additional significance from their historical and physical environment.
- **PRINCIPLE 2**  
Once structures are no longer used they become derelict and fall into disrepair. In addition to this buildings derive a significant part of their cultural significance through use. The compatible reuse of the identified heritage resources (and all buildings in general) is important to their long term relevance and protection.
- **PRINCIPLE 3**  
The proposed project should be seen as an opportunity to highlight and enhance the cultural significance of the built heritage of the area to a wider audience, encouraging its conservation and appreciation on a broader scale.
- **PRINCIPLE 4**  
All work undertaken on any of the identified heritage resources must follow international best practise for the conservation and management of heritage resources (for example the principles and process outline in the Burra Charter) and in full compliance with the NHRA.

**The Mitigation Measures outlined below apply as follows:**

- To the 8 built heritage sites identified (these have been highlighted individually in the previous section).
- The remaining buildings which are proposed to be demolished have limited mitigation measures that are required which are outlined below.
- A summary of the specific application of the mitigation measures is included at the end of each section.



## GENERAL MITIGATION MEASURES FOR IDENTIFIED HERITAGE SITES

- Declaration of Built Heritage Resources
  - All identified heritage resources should be formally declared (Grade II) or included in a heritage register (all retained Grade 3).
  - All identified heritage resources should be clearly marked (with a plaque or sign) as recommended for declared heritage resources in the NHRA.
  
- Recording of retained identified Built Heritage Resources
  - All Grade II heritage resources need to be carefully documented and recorded. The record should consist of photographs as well as measured drawings.
  - All retained Grade III heritage resources should be photographically documented only.
  - This record should be of the heritage resource itself but also of adjacent structures, farm werf's (including planting and trees) and infrastructure.
  - All information should be publically accessible (for example uploaded onto the SAHRIS database).
  
- Recording of identified Built Heritage Resources proposed for demolition
  - All Grade III heritage resources that are proposed to be demolished need to be carefully documented and recorded as follows:
    - Detailed measured and surveyed drawings of the building, farm werf and outbuildings
    - Detailed photographic record of the building, farm werf and outbuildings.
    - Photographic record of the demolition/deconstruction process.
  - This record should be of the heritage resource itself but also of adjacent structures, farm werf's (including planting and trees) and infrastructure.
  - All information should be publically accessible (for example uploaded onto the SAHRIS database).
  
- Conservation Management Plan
  - As part of the Heritage Resources Management Process a Conservation Management Plan will be developed that will considered the requirements for the recording of heritage sites noted above.
  - A conservation management plan needs to be compiled for the ongoing management and protection of the identified Grade II built heritage resources.
  - A programme of regular monitoring of the condition of the heritage resource needs to be included as part of the conservation management plan.

- A Maintenance Programme needs to be included as part of the conservation management plan. This has the opportunity to include skills development for the specific maintenance projects. This could include mud brick baking, thatching, corbelled house construction and maintenance etc. These skills are rare and slowly being lost.
  - The monitoring of the heritage resources and the maintenance programme need to work in conjunction with each other.
  - Grade III heritage resources should have a limited maintenance and monitoring plan as part of the general maintenance programme undertaken of all structures within the SKA area.
- Cultural Landscape and Sense of Place
    - The farm werf forms part of the heritage resource and should be maintained.
    - Mature trees that are part of farm werfs should be maintained.
    - New fencing to existing farm werf's / buildings should be kept to a minimum. Where this is required a fencing which has a limited visual impact (for example Clearvue fencing in a dark colour) should be used.
- Compatible Reuse
    - No limitations should be placed on the type of use of buildings of heritage significance.
    - New uses and functions should however be compatible with the cultural significance of the heritage resource.
- GRADE II SITES
    - These should be considered as no-go areas for any work relating to the project (except compatible reuse during the operational stages of the project)
    - A 1km buffer zone is recommended around them.
- RETAINED GRADE IIIA SITES
    - Grade IIIa heritage resources are of high local significance.
    - They should be avoided as far as possible for any work relating to the project (except compatible reuse during the operational stages of the project)
    - Mitigation measures against potential negative impact on cultural significance should only be considered where no other alternatives are possible (for example the rerouting of a road etc.).
    - A 150m buffer zone is recommended around them.

- RETAINED GRADE III B & C
  - A 50m buffer zone is recommended.
  - Mitigation measures are acceptable within the buffer zones should no alternative be available. For example is an existing road runs within the buffer zone it would almost always be more desirable to reuse the existing road than to create a new road.
  
- Construction
  - The proposed mitigation measures apply during both the construction and operation phases of the project.
  - The buffer zones proposed apply to all construction activities including the parking of vehicles, the storing of construction materials, workers accommodation, workers recreation, the parking of construction vehicles etc.
  - Enforced speed limits along roads adjacent to heritage resources are recommended.

## APPLICATION OF MITIGATION MEASURES - Corbelled Buildings - BHS 1 & 7

<b>IMPACT DESCRIPTION: Indirect impacts to corbelled house structures within the site-specific area resulting in damage or destruction (BHS 1 &amp; 7)</b>				
<b>Predicted for project phase:</b>	Pre-construction	Construction	Operation	Decommissioning
<b>Dimension</b>	<b>Rating</b>	<b>Motivation</b>		
<b>PRE-MITIGATION</b>				
Duration	Permanent (7)	Accidental damage or destruction through indirect impacts to the structure will be permanent	Consequence: Extremely detrimental (-20)	Significance: Minor - negative (-40)
Extent	National (6)	Corbelled buildings are finite, and associated with a particular point in the history of South Africa. Any impacts to these structures will affect the historical record of South Africa		
Intensity x type of impact	Extremely high - negative (-7)	Any unmitigated change to these resources will result in an extremely high negative impact		
Probability	Improbable (2)	Considering the known location of these resources, and the proposed Project, it is improbable that the identified impacts will manifest		
<b>MITIGATION:</b>				
<p>These heritage resources should be considered a 'no-go' area. It is recommended that a 1km buffer around these resources be established and maintained throughout the Project life, within which no project related activities may take place. The structures must be recorded in detail through photographs and measured drawings.</p> <p>With specific reference to the following known corbelled houses:</p> <ul style="list-style-type: none"> <li>- BHS 1: The corbelled building and successive farm houses are to be retained and enhanced. No limitations are proposed on the types of use of the buildings, as long as the proposed new uses and functions are compatible with the defined CS of the structures; and</li> <li>- BHS 7: The proposed access road must be rerouted to outside the proposed 1km buffer to remove any negative impacts that may manifest. Furthermore, development in the valley to the north must be minimised.</li> </ul>				
<b>POST-MITIGATION</b>				
Duration	Transient (1)	Recommended mitigation measures will remove identified negative impact	Consequence: Slightly beneficial (8)	Significance: Minor - positive (48)
Extent	Limited (2)	It will be limited to the specific resources		
Intensity x type of impact	High - positive (5)	Proposed management and mitigation measures will result in a positive change to the heritage resource through continued conservation and preservation through record		
Probability	Highly probable (6)	Where mitigation and management measures are implemented, it is highly probable that the negative impacts will be avoided, and positive impacts enhanced.		

## APPLICATION OF MITIGATION MEASURES - Groot Paardekloof - BHS 5 & 6

<b>IMPACT DESCRIPTION: Indirect impacts to the Groot Paardekloof Farmstead (BHS 5) and School (BHS 6) resulting in damage or destruction</b>				
<b>Predicted for project phase:</b>	Pre-construction	Construction	Operation	Decommissioning
<b>Dimension</b>	<b>Rating</b>	<b>Motivation</b>		
<b>PRE-MITIGATION</b>				
Duration	Permanent (7)	Accidental damage or destruction through indirect impacts to the structure will be permanent	Consequence: Extremely detrimental (-19)	Significance: Minor - negative (-38)
Extent	National (6)	The identified negative impact will result in damage or destruction of tangible remains of a heritage place described in the Bleek and Lloyd manuscripts, associated with the /Xam		
Intensity x type of impact	Very high - negative (-6)	The identified impacts is considered high and will result in a moderate change to the resource.		
Probability	Improbable (2)	Considering the known location of these resources, and the proposed Project, it is improbable that the identified impacts will manifest		
<b>MITIGATION:</b>				
<p>These heritage resources should be considered a 'no-go' area. It is recommended that a 1km buffer around these resources be established and maintained throughout the Project life, within which no project related activities may take place. The structures must be recorded in detail through photographs and measured drawings.</p> <p>No limitations are proposed on the types of use of the buildings, as long as the proposed new uses and functions are compatible with the defined CS of the structures</p>				
<b>POST-MITIGATION</b>				
Duration	Transient (1)	Recommended mitigation measures will remove identified negative impact	Consequence: Slightly beneficial (8)	Significance: Minor - positive (48)
Extent	Limited (2)	It will be limited to the specific resources		
Intensity x type of impact	High - positive (5)	Proposed management and mitigation measures will result in a positive change to the heritage resource through continued conservation and preservation through record		
Probability	Highly probable (6)	Where mitigation and management measures are implemented, it is highly probable that the negative impacts will be avoided, and positive impacts enhanced.		

## APPLICATION OF MITIGATION MEASURES - GRADE 3 Heritage Sites – BHS 8

<b>IMPACT DESCRIPTION: Demolition of historic built environment resources with recommended grading of III A and B (BHS 8)</b>				
<b>Predicted for project phase:</b>	Pre-construction	Construction	Operation	Decommissioning
<b>Dimension</b>	<b>Rating</b>	<b>Motivation</b>		
<b>PRE-MITIGATION</b>				
Duration	Permanent (7)	Demolition of structures will continue throughout and possibly beyond the project life.	Consequence: Highly detrimental (-15)	Significance: Minor - negative (-45)
Extent	Municipal Area (4)	The CS of individual structures and werfs derive additional significance from their surrounding historical, physical and contemporary built environment. Their removal will affect the local environment and other built structures therein.		
Intensity x type of impact	Moderately high - negative (-4)	The demolition of these structures will result in a major change to historic built structures with a low to high CS rating.		
Probability	Unlikely (3)	It is certain that select structures within the SKA Core management area will be demolished.		
<b>MITIGATION:</b>				
<p>Negative impacts to these structures should be avoided as far as possible, and a buffer of 150m for III A and 50m buffer for III B resources established respectively. It is recommended these buffers be maintained throughout the Project life. The CS of the structures is informed from the placement in the landscape (site), and association with associated buildings (context). These must be retained. Mitigation measures against potential negative impacts on the resources and associated CS must be considered when avoidance if the impacts themselves is not possible. It is recommended these structures be recorded in detail through photograph and measured drawings.</p> <p>No limitations are proposed on the types of use of the buildings, as long as the proposed new uses and functions are compatible with the defined CS of the structures. Any proposed alterations of structures with a recommended grading of III A and B are subject to the requirements stipulated under Section 34 of the NHRA and regulated by Chapter IV of GN R 548.</p>				
<b>POST-MITIGATION</b>				
Duration	Transient (1)	Recommended mitigation measures will remove the potential negative impacts	Consequence: Slightly beneficial (6)	Significance: Minor - positive (36)
Extent	Limited (2)	Any negative impacts that may manifest will be limited to the specific heritage resources		
Intensity x type of impact	Moderate - positive (3)	Proposed management and mitigation measures will result in a positive change to the heritage resource through continued conservation and preservation in use of the building and records.		
Probability	Highly probable (6)	Where management and mitigation measures are implemented, it is highly probable the identified negative impacts will be avoided, and the positive impacts enhanced.		

**APPLICATION OF MITIGATION MEASURES - GRADE 3 Heritage Sites Proposed for Demolition – BHS 2, 3 & 4**

<b>IMPACT DESCRIPTION: Demolition of graded heritage resources (BHS 2, 3, &amp; 4)</b>				
<b>Predicted for project phase:</b>	Pre-construction	Construction	Operation	Decommissioning
<b>Dimension</b>	<b>Rating</b>	<b>Motivation</b>		
<b>PRE-MITIGATION</b>				
Duration	Permanent (7)	Demolition of structures will continue throughout and possibly beyond the project life.	Consequence: Highly detrimental (-15)	Significance: Moderate - negative (-105)
Extent	Municipal Area (4)	The CS of individual structures and werfs derive additional significance from their surrounding historical, physical and contemporary built environment. Their removal will affect the local environment and other built structures therein.		
Intensity x type of impact	Moderately high - negative (-4)	The demolition of these structures will result in a major change to historic built structures with a low to high CS rating.		
Probability	Certain (7)	It is certain that select structures within the SKA Core management area will be demolished.		
<b>MITIGATION:</b>				
<p>The nature of the SKA project makes negative impacts to these structures unavoidable.</p> <p>Any proposed demolition of graded structures are subject to the requirements stipulated under Sections 27 &amp; 34 of the NHRA and regulated by Chapter IV of GN R 548.</p> <p>It is recommended the structures only be demolished to their existing floor level, i.e. removal of the walls and superstructure but keeping the buildings foot print to prevent squatting and the need for maintenance.</p> <p>The graded structures and associated adjacent structures must be recorded in detail in support of the application for demolition, and as a method of "preservation through record". Records should consist of photographs and measured drawings.</p> <p>Historic building materials, where in existence and in a good condition (such as door and window frames, fireplaces etc), should be retained and made available for reuse for other historic structures in the area.</p>				
<b>POST-MITIGATION</b>				
Duration	Transient (1)	Recommended mitigation measures will remove the potential negative impacts	Consequence: Highly detrimental (-15)	Significance: Moderate - negative (-90)
Extent	Municipal Area (4)	The CS of individual structures and werfs derive additional significance from their surrounding historical, physical and contemporary built environment. Their removal will affect the local environment and other built structures therein.		
Intensity x type of impact	Moderately high - negative (-4)	The demolition of these structures will result in a major change to historic built structures with a low to high CS rating.		
Probability	Certain (7)	It is certain that select structures within the SKA Core management area will be demolished.		

## GENERAL MITIGATION MEASURES FOR STRUCTURES IDENTIFIED FOR DEMOLITION

<b>IMPACT DESCRIPTION: Demolition of historic built environment resources older than 60 years</b>				
<b>Predicted for project phase:</b>	Pre-construction	Construction	Operation	Decommissioning
<b>Dimension</b>	<b>Rating</b>	<b>Motivation</b>		
<b>PRE-MITIGATION</b>				
Duration	Beyond project life (6)	Demolition of structures will continue throughout and possibly beyond the project life.	Consequence: Moderately detrimental (-13)	Significance: Moderate - negative (-91)
Extent	Local (3)	The CS of individual structures and werfs derive additional significance from their surrounding historical, physical and contemporary built environment. Their removal will affect the local environment and other built structures therein.		
Intensity x type of impact	Moderately high - negative (-4)	The demolition of these structures will result in a major change to historic built structures with a low to high CS rating.		
Probability	Certain (7)	It is certain that select structures within the SKA Core management area will be demolished.		
<b>MITIGATION:</b>				
<p>Any proposed demolition of structures older than 60 years are subject to the requirements stipulated under Section 34 of the NHRA and regulated by Chapter IV of GN R 548.</p> <p>It is recommended the structures be demolished down to their floor level, i.e. removal of all superstructure to retain the buildings footprint while preventing squatting or the need for maintenance. The identified heritage and associated adjacent structures must be recorded in detail in support of the application for demolition, and as a method of "preservation through record". Records should consist of photographs and measured drawings.</p>				
<b>POST-MITIGATION</b>				
Duration	Beyond project life (6)	Demolition of structures will continue throughout and possibly beyond the project life.	Consequence: Moderately beneficial (13)	Significance: Moderate - positive (91)
Extent	Local (3)	The CS of individual structures and werfs derive additional significance from their surrounding historical, physical and contemporary built environment. Their removal will affect the local environment and other built structures therein.		
Intensity x type of impact	Moderately high - positive (4)	Proposed mitigations will preserve the structures through record, and maintain the sense-of-place and cultural landscape, resulting in a moderately high positive impact.		
Probability	Certain (7)	The proposed mitigations notwithstanding, it remains certain that select structures within the SKA Core management area will be demolished.		



## Demolitions

- Where buildings in the core are proposed for demolition they should be demolished down to their existing floor levels (removal of all superstructure, walls etc.) The foot print of the buildings will remain visible while they are no longer vulnerable to squatting and require no future maintenance.
- These “new ruins” allow for the reading of the historic cultural landscape. They should be allowed to naturally decay and do not require maintenance.
- All farm walls, kraals, windmills, farm dams etc. should as far as possible be retained. Where removal is necessary a similar approach as noted above should be employed
- All significant trees and planting should be retained.
- All building rubble should be removed from the sites.

## OTHER MITIGATION MEASURES

- Place Names
  - Existing and historical place and building names can be of cultural significance and have historic relevance. These should not be changed.
- Interested and Affected Parties
  - IAP's should be consulted as part of the Conservation Management Plan process.
  - This should include VASA with respect to the corbelled buildings.
- Greater Context
  - The municipalities of the adjacent towns which stand to benefit economically should be engaged to develop conservation management guideline and heritage registers to mitigate against the potentially negative impact of new development.

## 9 RECOMMENDATIONS & CONCLUSION

The following actions are recommended to start immediately:

- The identified Grade II built heritage resources are to be declared where they have not been previously declared. Grade III heritage resources are to be included as part of a heritage register.
- The identified Grade II built heritage resources are to be fully documented and recorded. Grade III built heritage resources are to be photographically documented only.
- All Grade III structures that are proposed to be demolished should be documented in detail as outlined under the proposed mitigation measures. Individual Section 27 and/or Section 34 permit applications in terms of the requirements of the NHRA made to the local provincial heritage resources authority, Ngwao Boswa jwa Kapa Bokone (NBKB). A checklist for applications has been included in Appendix A.
- All structures that are over 60 year old and are proposed to be demolished need to have individual Section 34 permit applications in terms of the requirements of the NHRA made to the local provincial heritage resources authority, Ngwao Boswa jwa Kapa Bokone (NBKB). A checklist for applications has been included in Appendix A.

Heritage resources are both important and finite. Any impact on their cultural significance is undesirable. The proposed new phase of the SKA project will have limited direct or indirect impact on any identified heritage resources. Where a potentially negative impact on cultural significance has been assessed mitigation measures have been proposed that reduce the severity of the impact to acceptable levels. In addition to this general mitigation measures and conservation principles have been proposed to act as guidelines for all built heritage resource both within the core area as well as in the spiral arms. While no impact on built heritage resources is expected beyond those identified these principles and guidelines enable appropriate mitigation measures to be taken should that be necessary.

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## **11 APPENDIX**

**A – Checklist for Section 34 Applications to the Provincial heritage Resources Authority**

**B – Photographic Documentation**

## APPENDIX A – Checklist for Section 34 Applications to the Provincial heritage Resources Authority

All changes to buildings or structures older than 60 years in age must be submitted for approval under section 34 of the NHRA to the local Provincial heritage Resources Authority. Changes include alterations, additions, full and partial demolition.

The checklist below outlines the application process and requirements:

SECTION 34 CHECKLIST	
1	Photographic documentation of the building structure and immediate context
2	Location Plan with GPS coordinates
3	Copies of any original drawings (if these are available). This is unlikely due to the rural nature of the SKA core area and that farms were historical not required to submit building plans
4	Historical background information (farm / building history) where available.
5	Plans of the proposed changes (or description in the case of demolition)
6	Motivation for the proposed work
7	Comments from government department / SKA authority (requirement for state owned properties)
8	Public Consultation – Newspaper advertisement (classified advert), notice place on the building. Any comments received need to be included as part of the application.
9	Items above to be compiled into a brief report
10	Submit application via SAHRIS online portal ( <a href="http://www.sahra.org/sahris/">www.sahra.org/sahris/</a> )

SAHRIS APPLICATION SUBMISSION PROCESS (item 10 above)	
1	Create a case at <a href="http://www.sahra.org.za/node/add/heritage-cases">http://www.sahra.org.za/node/add/heritage-cases</a>
2	Define your application
	Name applicant
	Name consultant team
	Select heritage authority & case type (section 34)
3	Select site
	Application Details
	Case reference (eg demolition of...)
	Short description
	Address / GPS / farm location
	Drawing numbers for alterations and additions
4	Expanded motivation
	List reference (where applicable)
	Supporting Documents and Uploads
	Add any supporting documents etc. as required
	Upload photographs (up to 10, if more include in report)
	Upload consent letters (SKA) & public comment

## **APPENDIX B – Photographic Documentation**

**BHS 1** – figures 48 - 59

**BHS 2** – figures 42 - 47

**BHS 4** – figures 35 - 41

**BHS 5** – figures 2 - 27

**BHS 6** – figures 28 - 34

**BHS 7** – figures 60 - 73

**BHS 8** – figures 34



**Figure 2:**



**Figure 3:**



**Figure 4:**



**Figure 5:**



**Figure 6:**  
**Square kilometre Array**



**Figure 7:**



**Figure 8:**



**Figure 9:**



**Figure 10:**



**Figure 11:**



**Figure 12:**  
**Square kilometre Array**



**Figure 13:**





**Figure 14:**



**Figure 15:**



**Figure 16:**  
**Square kilometre Array**



**Figure 17:**



**Figure 18:**



**Figure 19:**



**Figure 20:**



**Figure 21:**



**Figure 22:**  
**Square kilometre Array**



**Figure 23:**



**Figure 24:**



**Figure 25:**



**Figure 26:**



**Figure 27:**



**Figure 28:**  
**Square kilometre Array**



**Figure 29:**



**Figure 30:**



**Figure 31:**



**Figure 32:**



**Figure 33:**



**Figure 34:**  
**Square kilometre Array**



**Figure 35:**



**Figure 36:**



**Figure 37:**



**Figure 38:**



**Figure 39:**



**Figure 40:**

**Square kilometre Array**



**Figure 41:**



**Figure 42:**



**Figure 43:**



**Figure 44:**



**Figure 45:**



**Figure 46:**  
**Square kilometre Array**



**Figure 47:**



**Figure 48:**



**Figure 49:**



**Figure 50:**



**Figure 51:**



**Figure 52:**  
**Square kilometre Array**



**Figure 53:**



**Figure 54:**



**Figure 55:**



**Figure 56:**



**Figure 57:**



**Figure 58:**  
**Square kilometre Array**



**Figure 59:**





**Figure 60:**



**Figure 61:**



**Figure 62:**



**Figure 63:**



**Figure 64:**  
**Square kilometre Array**



**Figure 65:**



**Figure 66:**



**Figure 67:**



**Figure 68:**



**Figure 69:**  
**Square kilometre Array**



**Figure 70:**



**Figure 71:**



**Figure 72:**



**Figure 73:**

**Square kilometre Array**